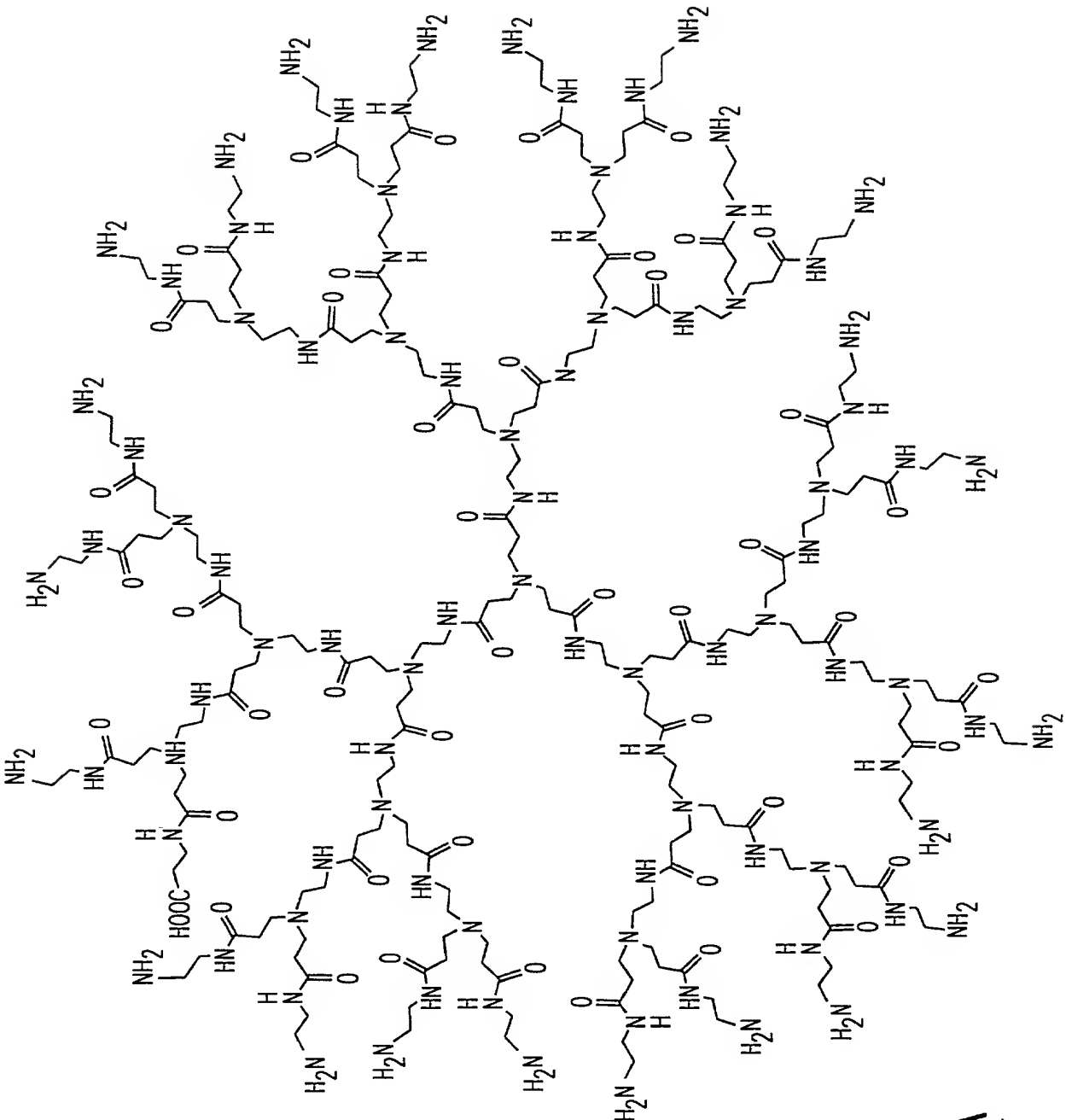

FIG. 1A
PRIOR ART

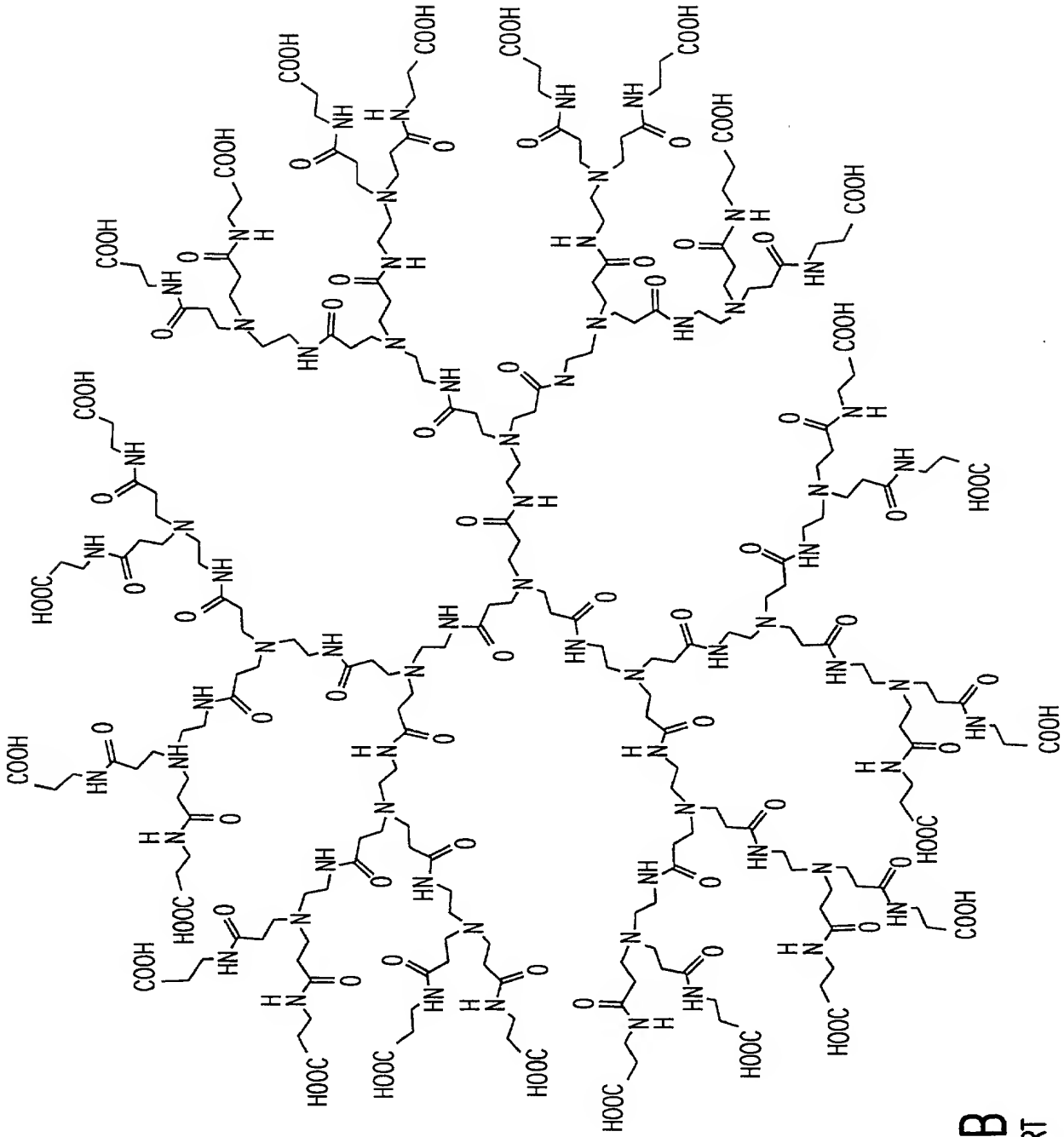

FIG. 1B
PRIOR ART

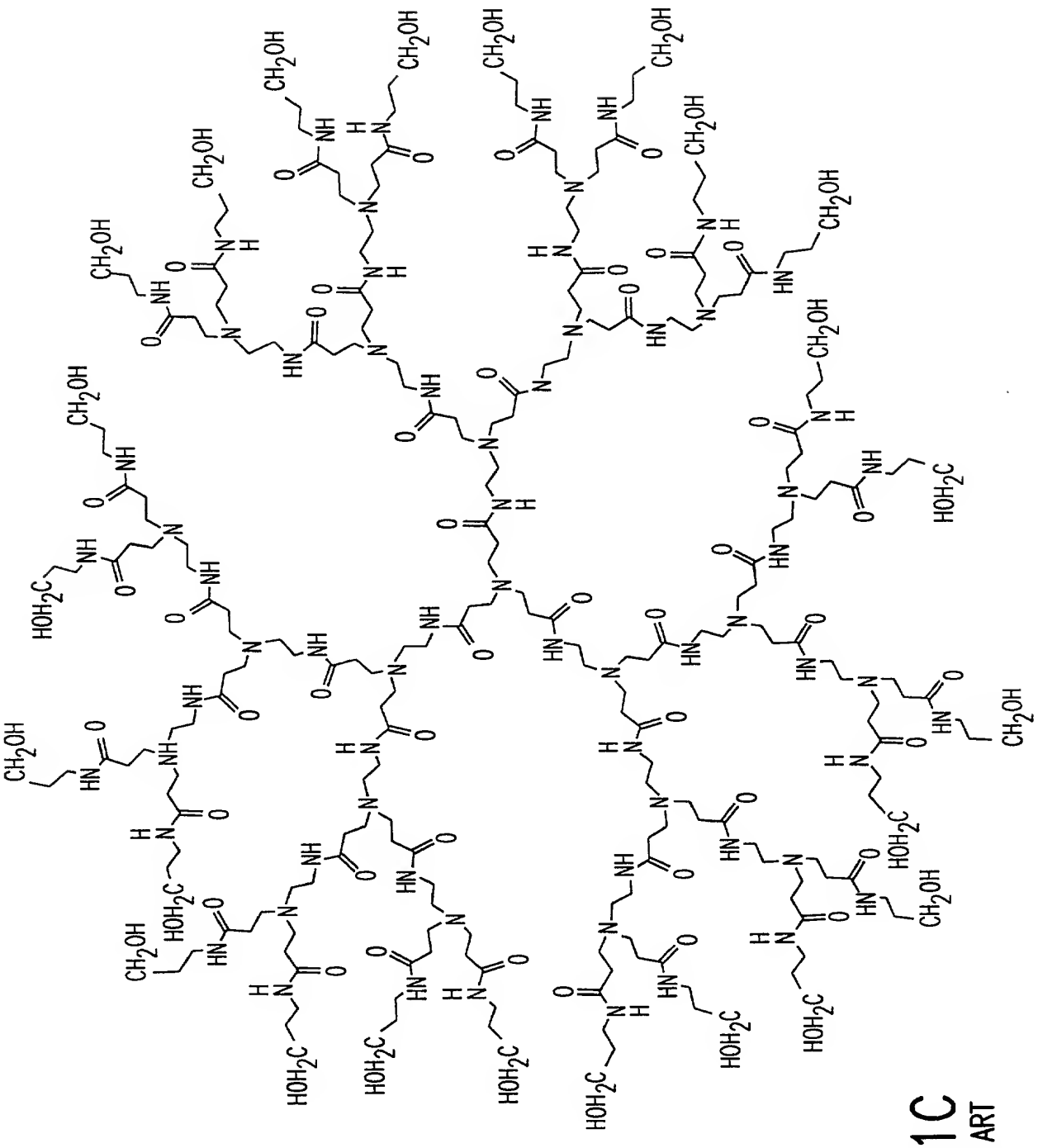

FIG. 1C
PRIOR ART

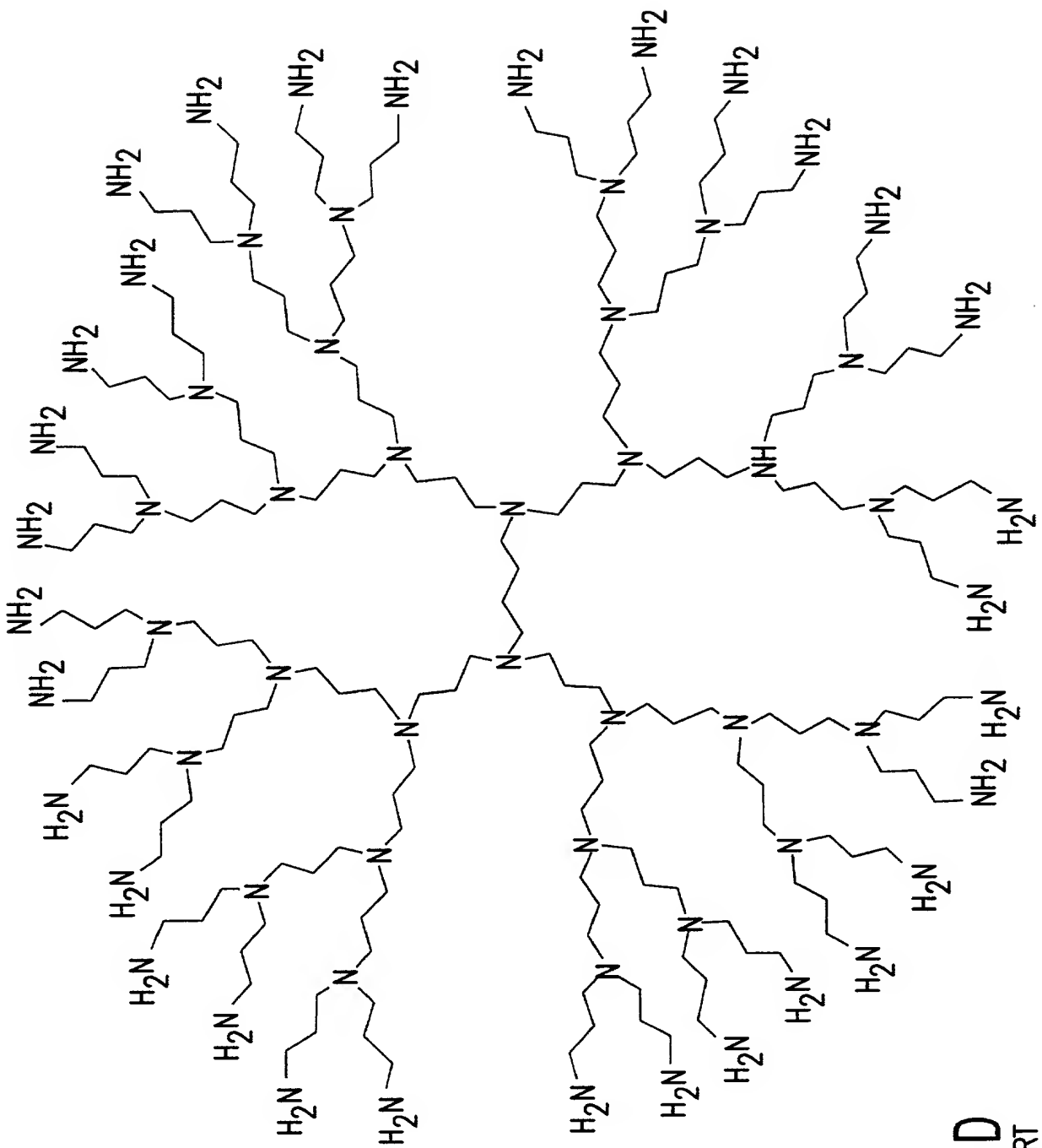

FIG. 1D
PRIOR ART

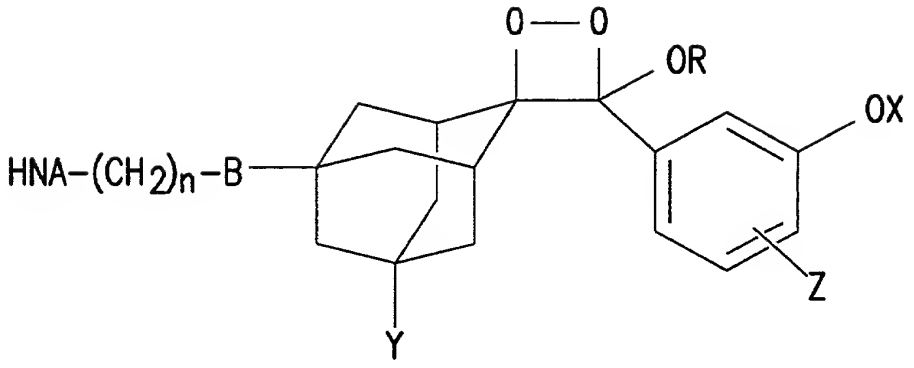

FIG.2A

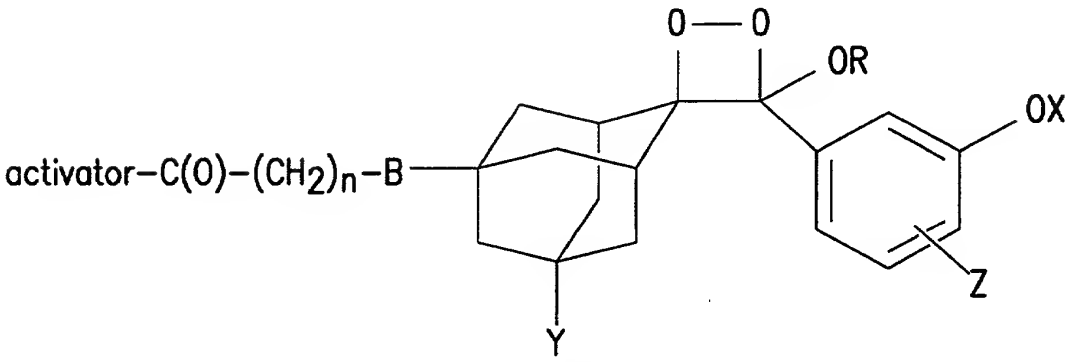

FIG.2B

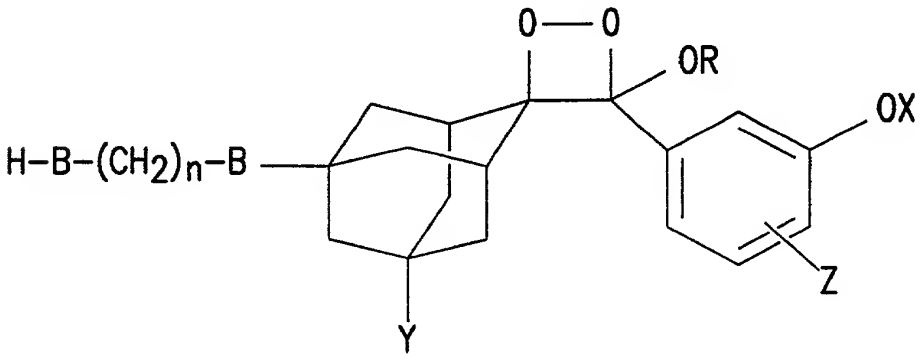

FIG.2C

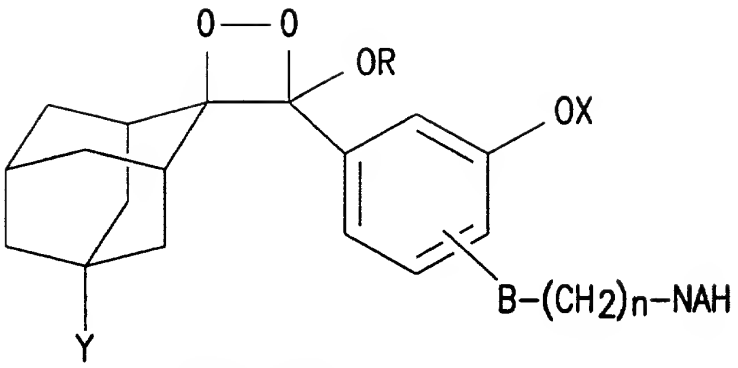

FIG.2D

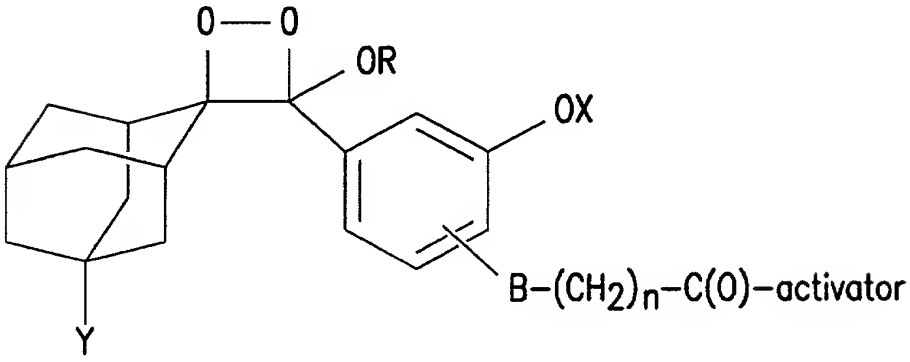

FIG.2E

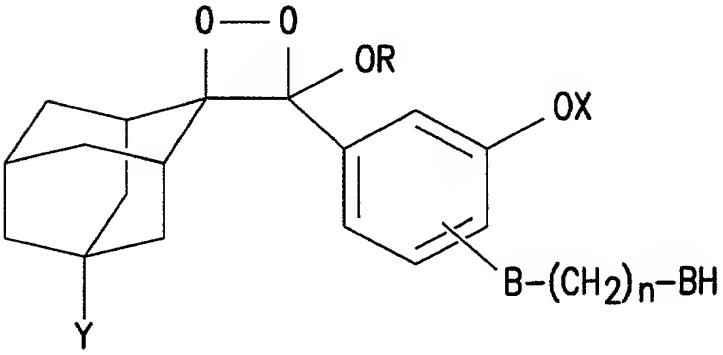

FIG.2F

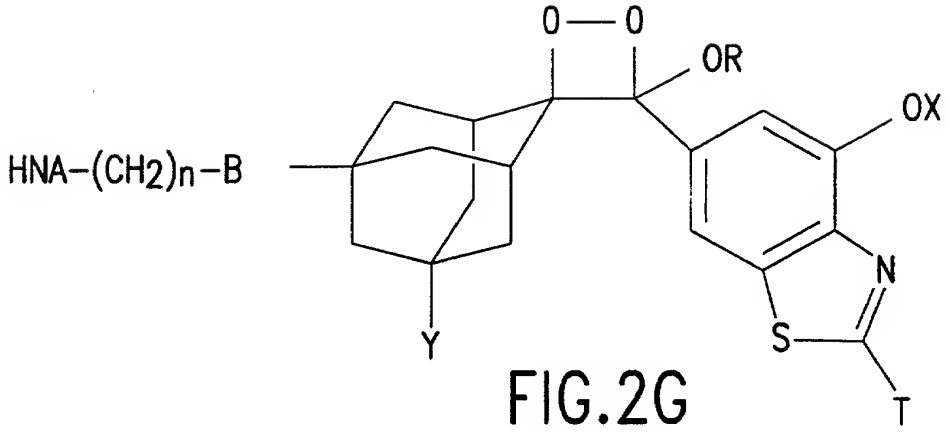

FIG.2G

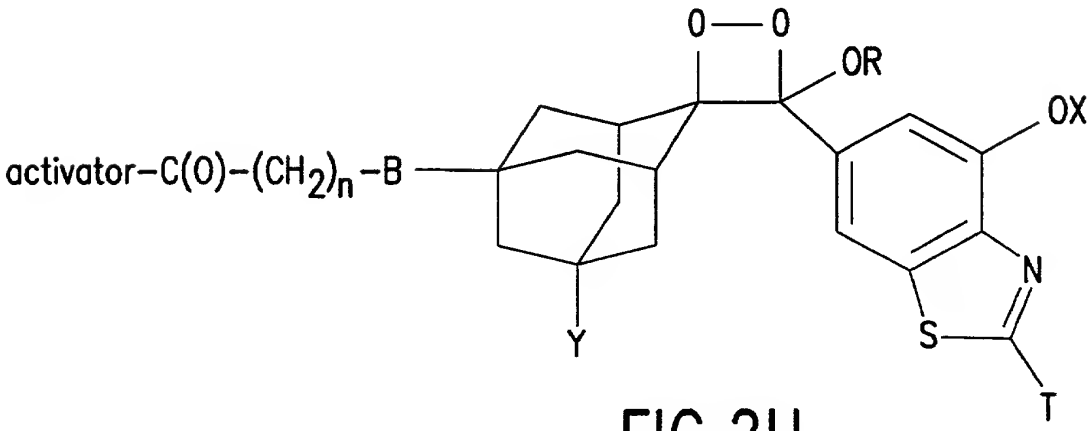

FIG.2H

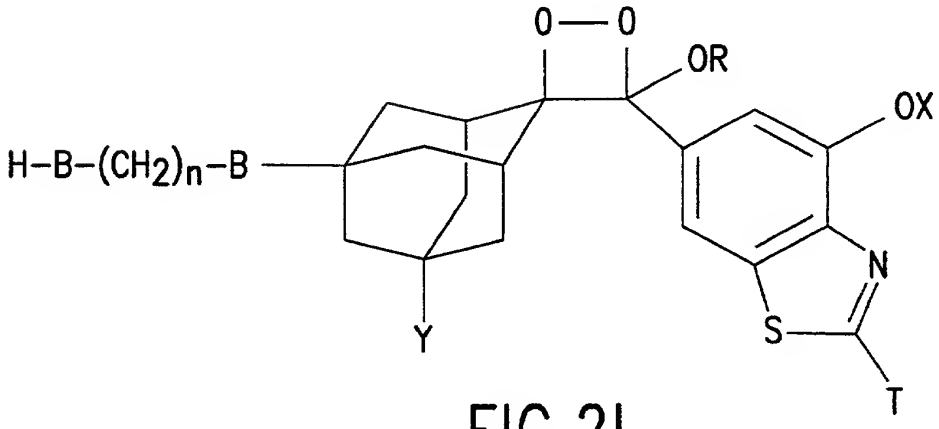

FIG.2I

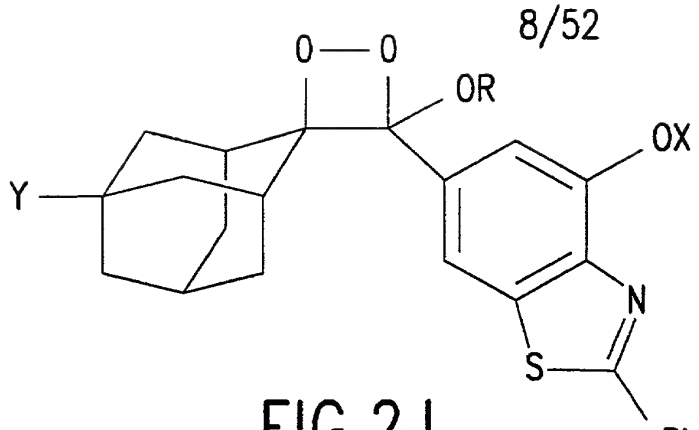

FIG.2J

Phenyl–B–$(CH_2)_n$–NHA

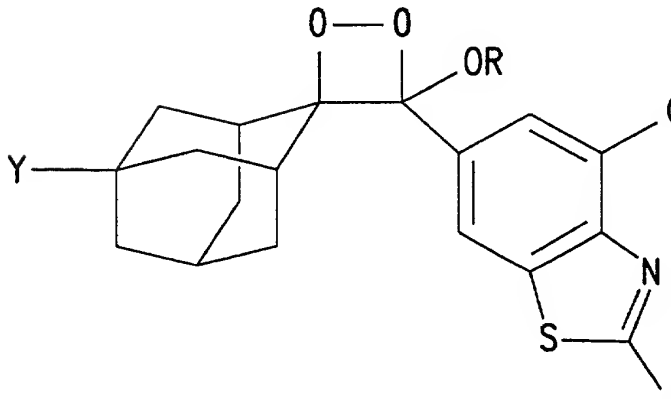

FIG.2K

Phenyl–B–$(CH_2)_n$–C(O)–activator

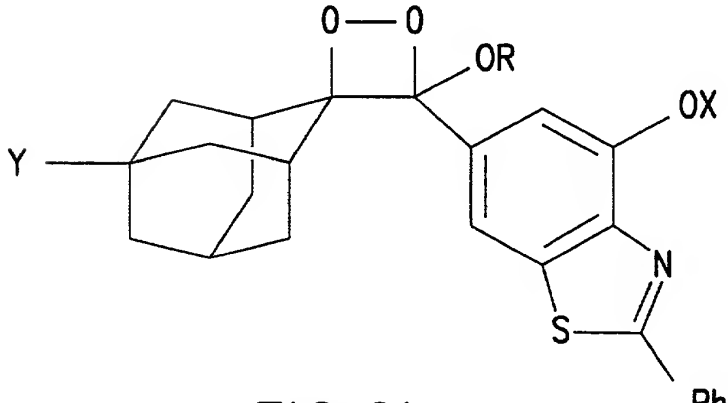

FIG.2L

Phenyl–B–$(CH_2)_n$–B–H

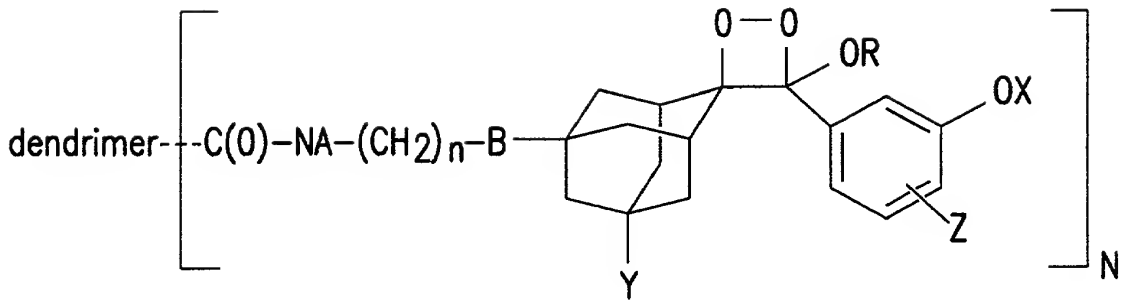
dendrimer
C(0)–NA–(CH2)n–B
O—O
OR
OX
Z
Y
N

FIG.3A

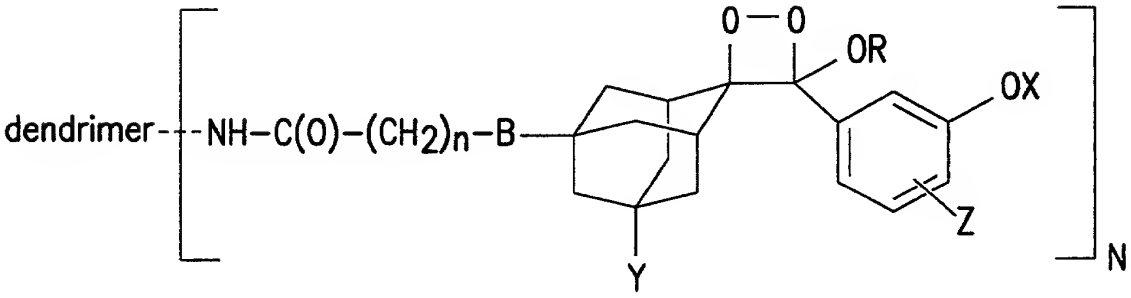
dendrimer
NH–C(0)–(CH2)n–B
O—O
OR
OX
Z
Y
N

FIG.3B

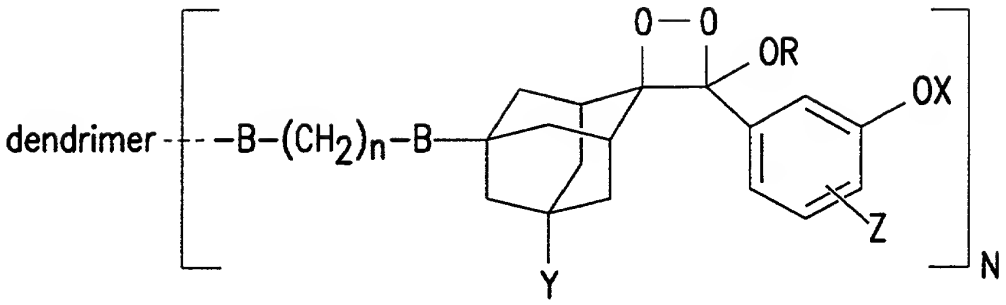

FIG.3C

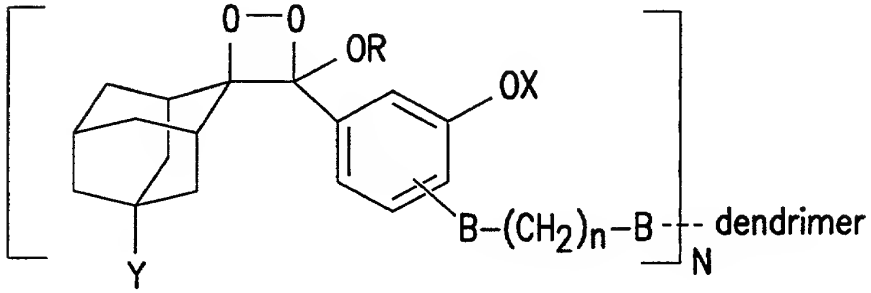

FIG.3D

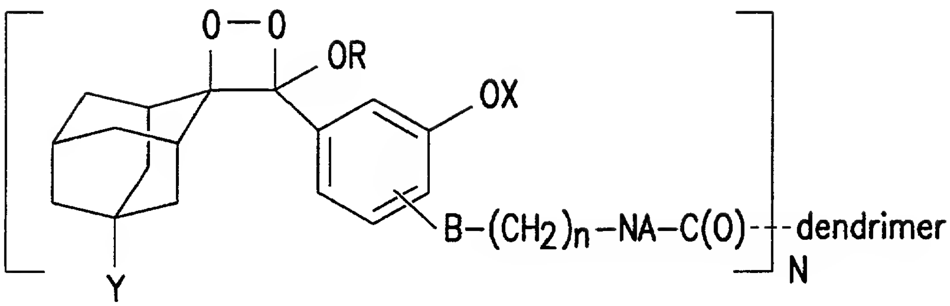
O
O
OR
OX
B–(CH2)n–NA–C(O)- - -dendrimer
N
Y

FIG.3E

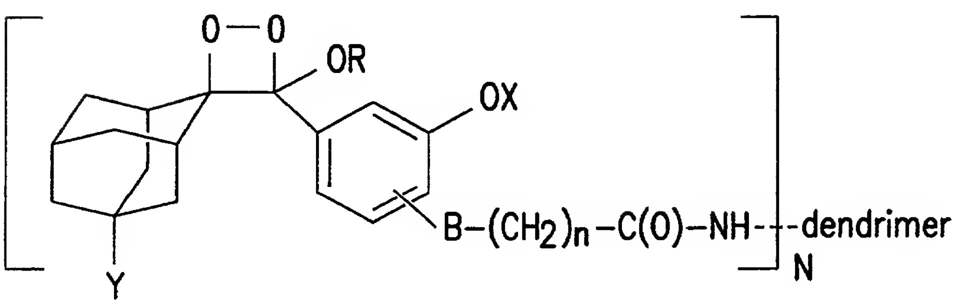
O
O
OR
OX
B–(CH2)n–C(O)–NH- - -dendrimer
N
Y

FIG.3F

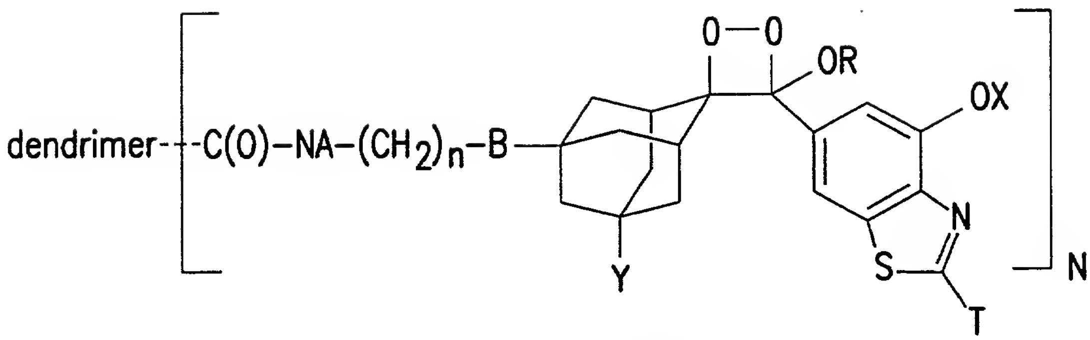
dendrimer--C(O)–NA–(CH2)n–B
O—O
OR
OX
N
S
T
Y
N

FIG.3G

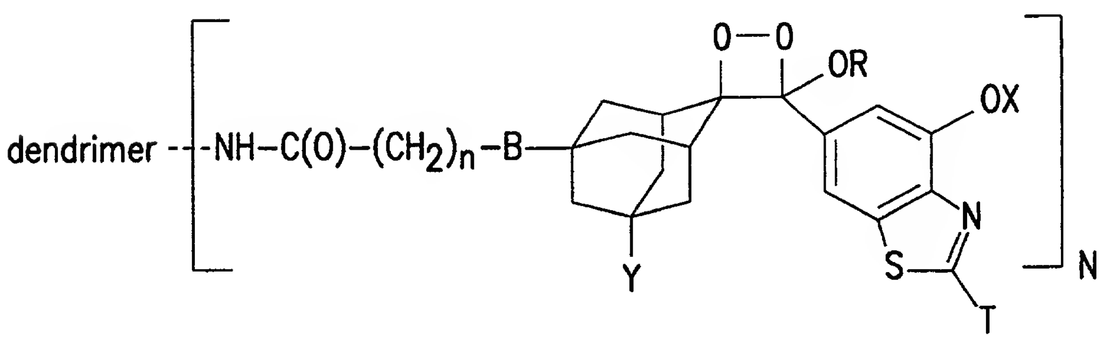
dendrimer --NH–C(O)–(CH2)n–B
O—O
OR
OX
N
S
T
Y
N

FIG.3H

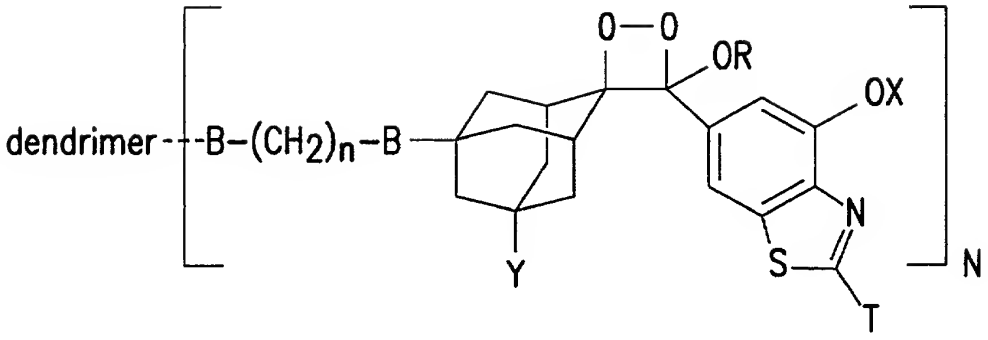
dendrimer
B–(CH2)n–B
O—O
OR
OX
Y
N
S
T
N

FIG.3I

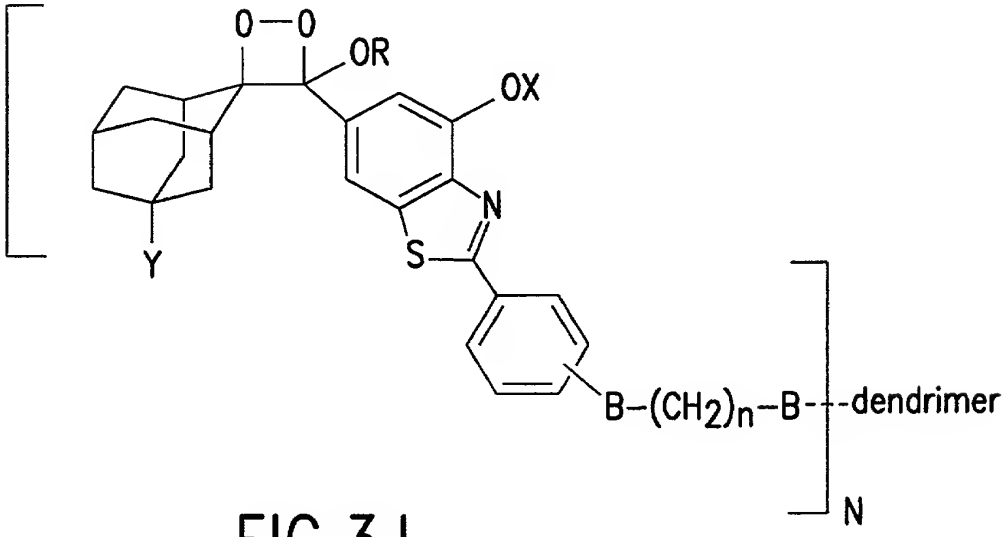
O—O
OR
OX
Y
N
S
B–(CH2)n–B
dendrimer
N

FIG.3J

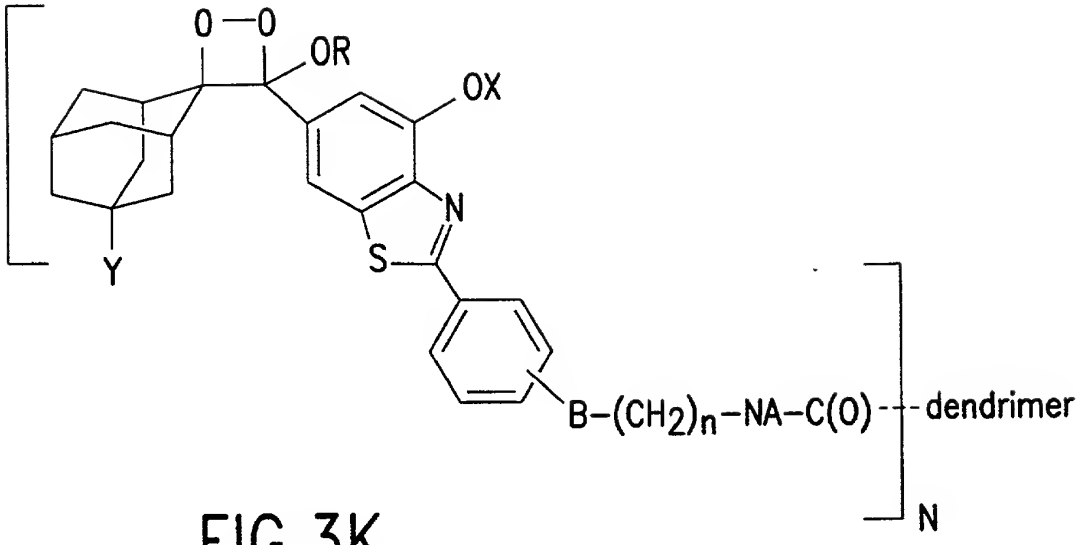
O—O
OR
OX
N
S
Y
B–(CH2)n–NA–C(0)
dendrimer
N

FIG.3K

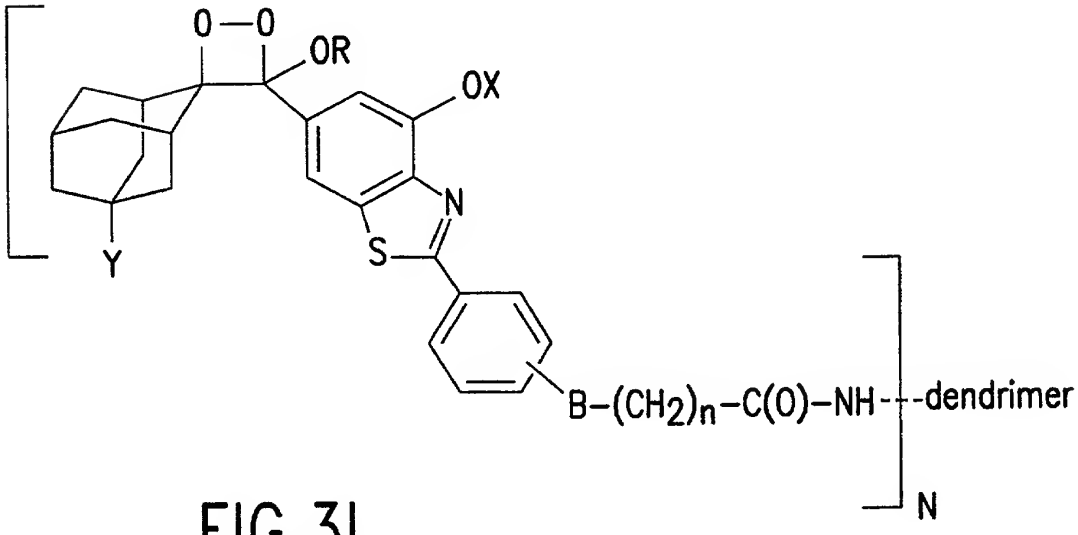
O—O
OR
OX
N
S
Y
B–(CH2)n–C(0)–NH
dendrimer
N

FIG.3L

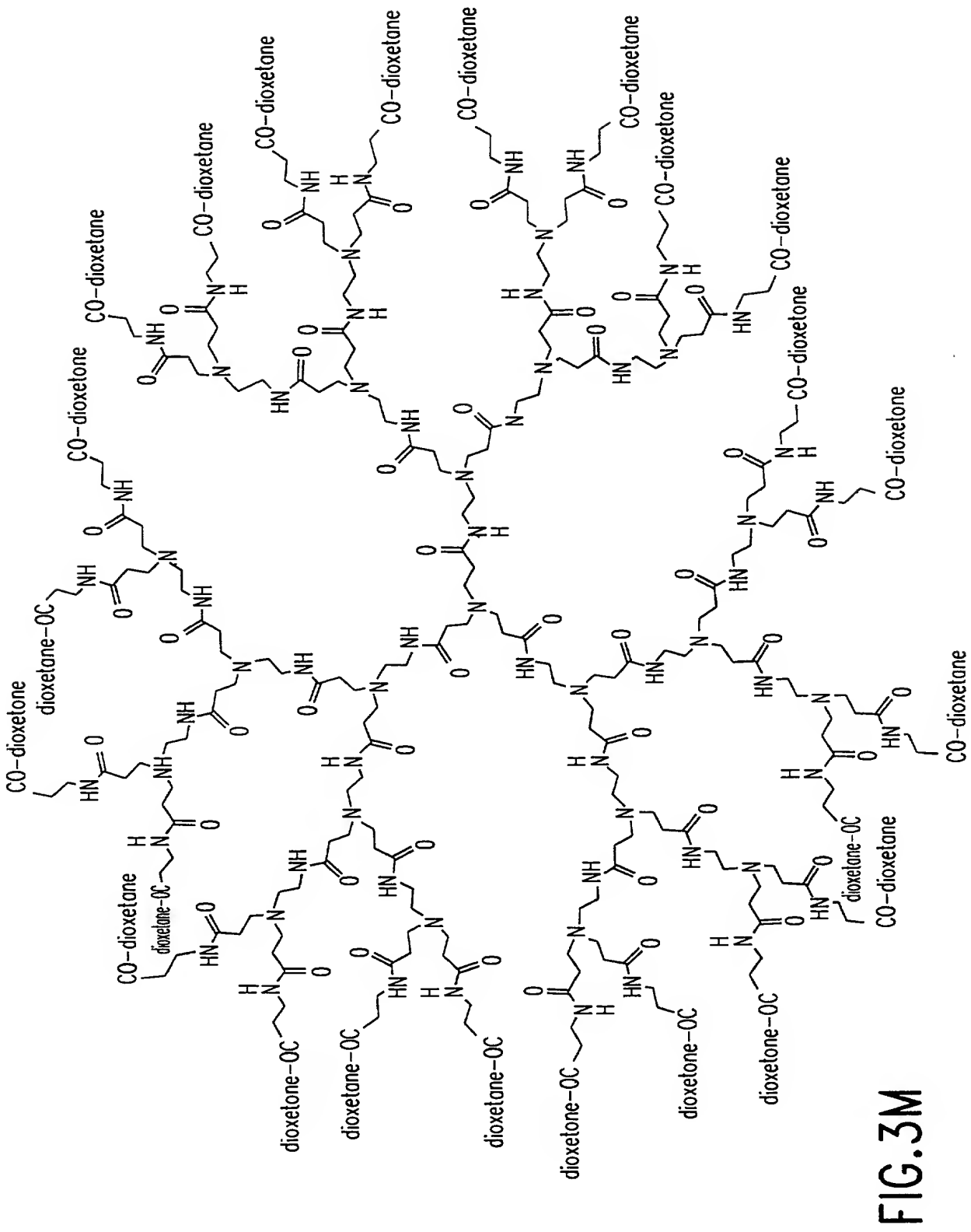

FIG.3M

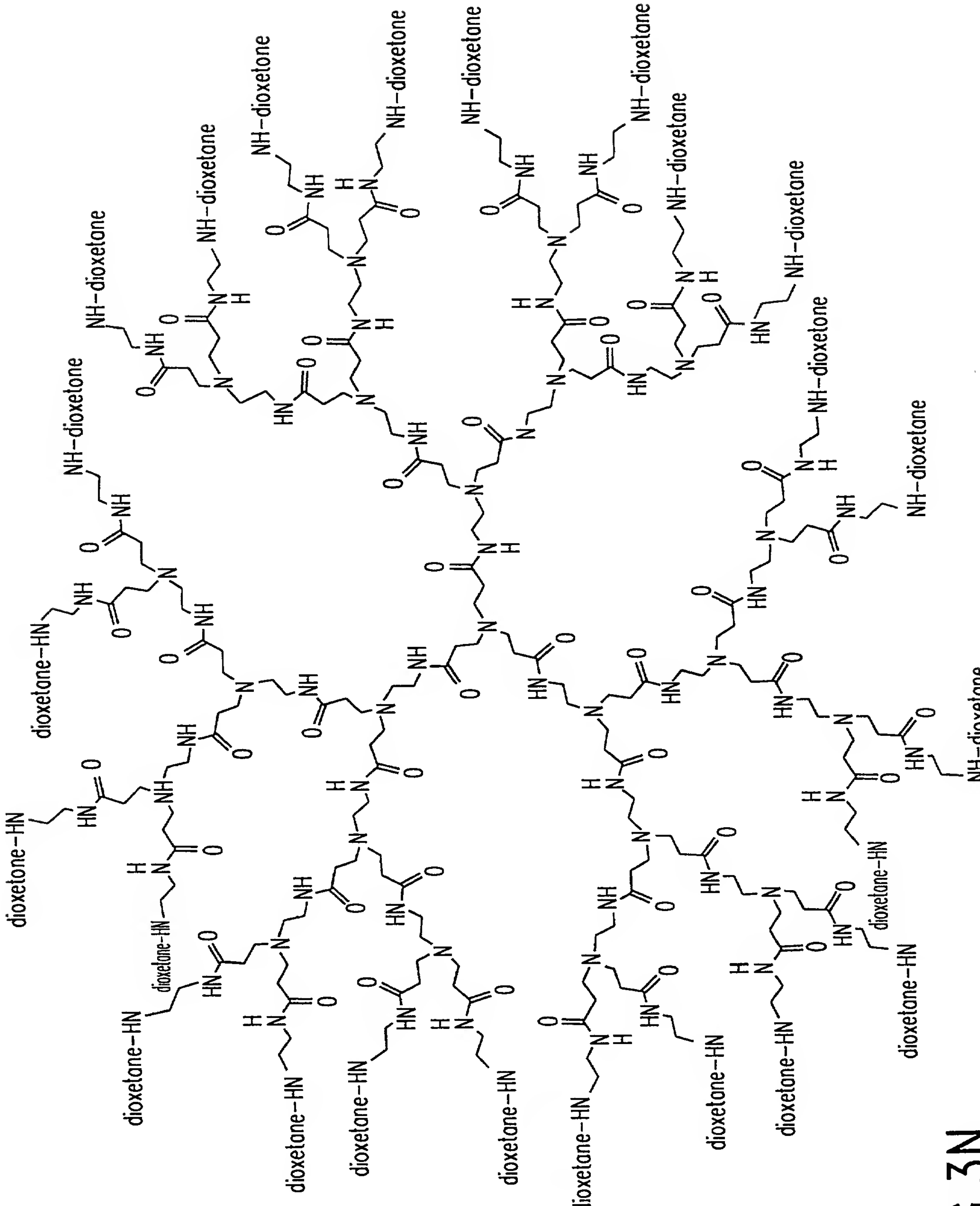

FIG.3N

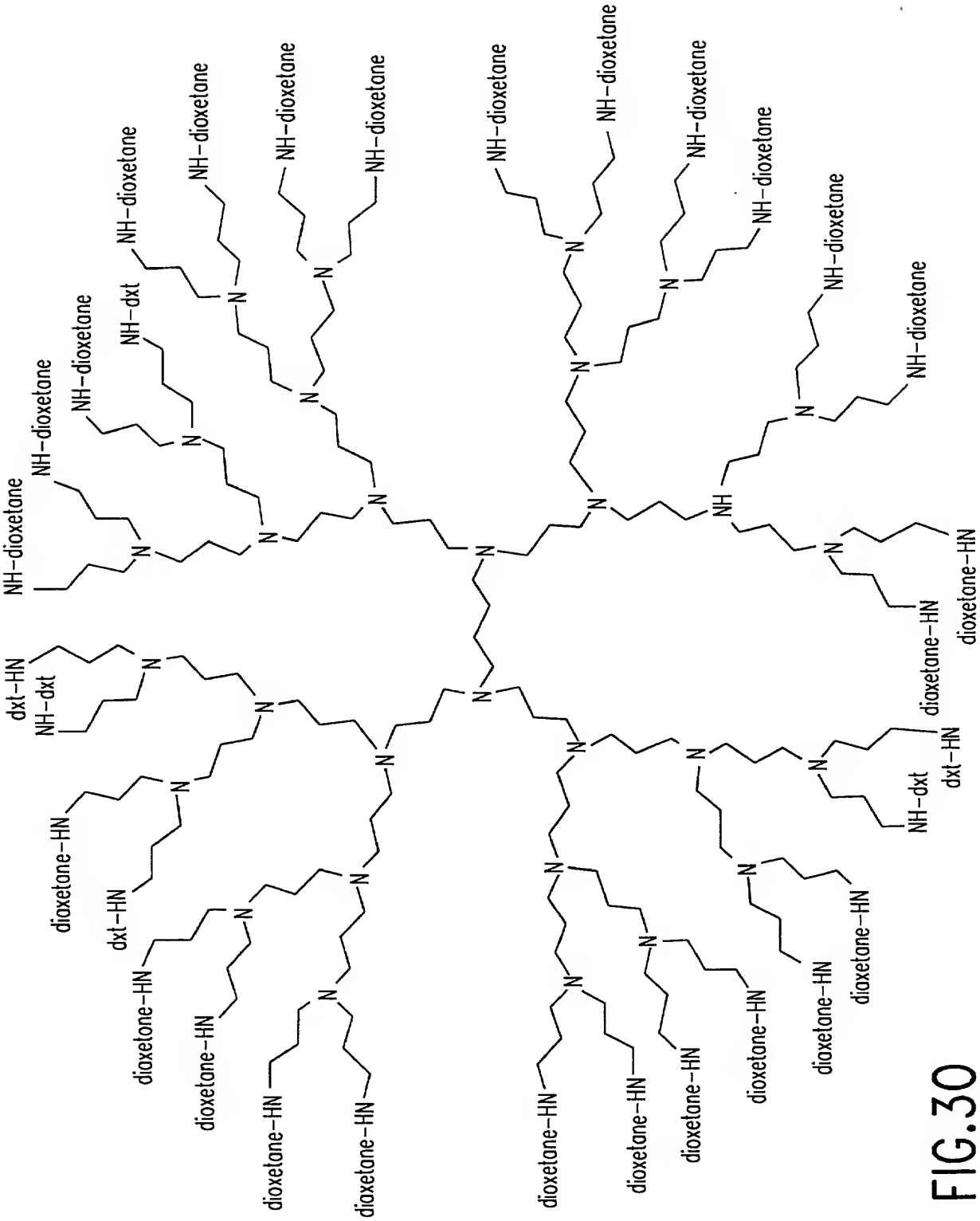
NH-dioxetane
NH-dioxetane
NH-dioxetane
NH-dxt
NH-dioxetane
NH-dioxetane
NH-dioxetane
NH-dioxetane
NH-dioxetane
NH-dioxetane
NH-dioxetane
NH-dioxetane
NH-dioxetane
NH-dioxetane
dxt-HN
NH-dxt
dioxetane-HN
dxt-HN
dioxetone-HN
dioxetane-HN
dioxetane-HN
dioxetane-HN
dioxetane-HN
dioxetane-HN
dioxetane-HN
dioxetane-HN
dioxetane-HN
dioxetane-HN
dioxetane-HN
NH-dxt
dxt-HN
dioxetane-HN
dioxetane-HN

FIG.30

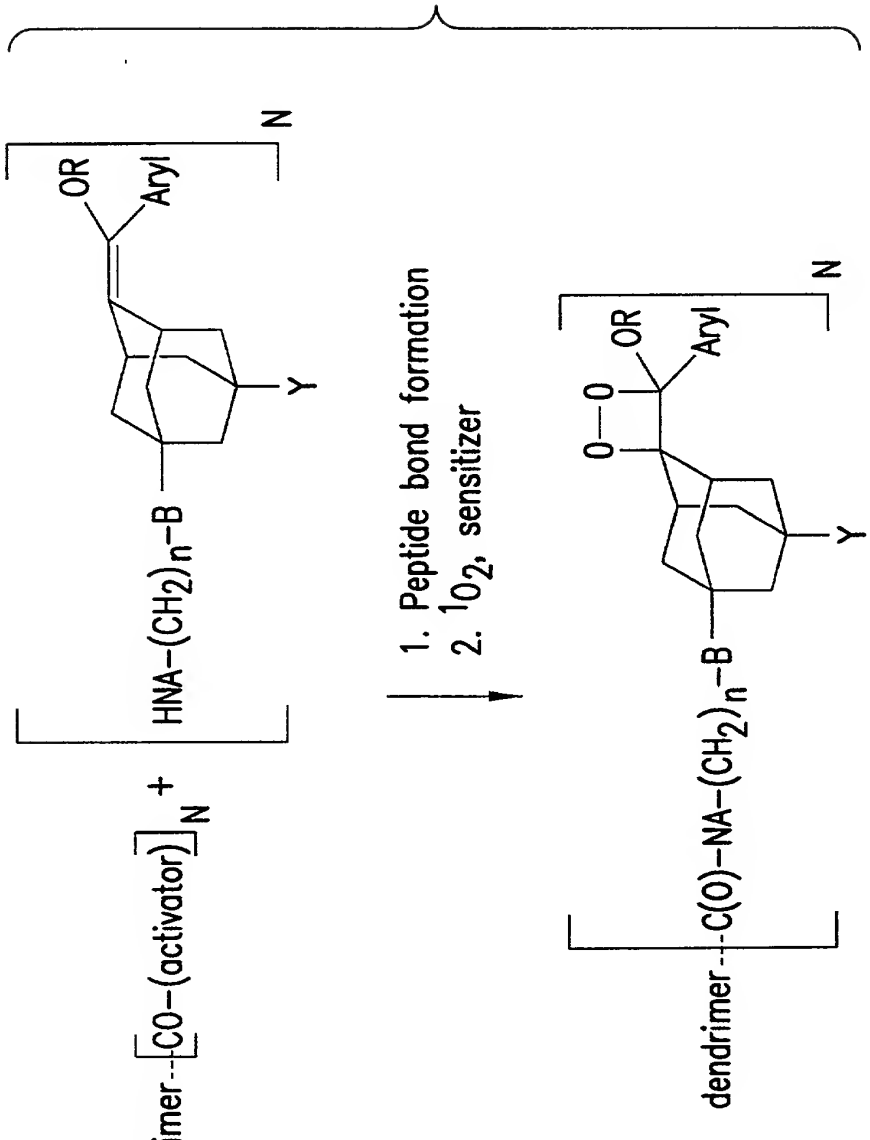
Dendrimer--[CO–(activator)]N+
HNA–(CH2)n–B
OR
Aryl
Y
N
1. Peptide bond formation
2. 1O2, sensitizer
dendrimer--C(O)–NA–(CH2)n–B
O–O
OR
Aryl
Y
N

FIG.4A

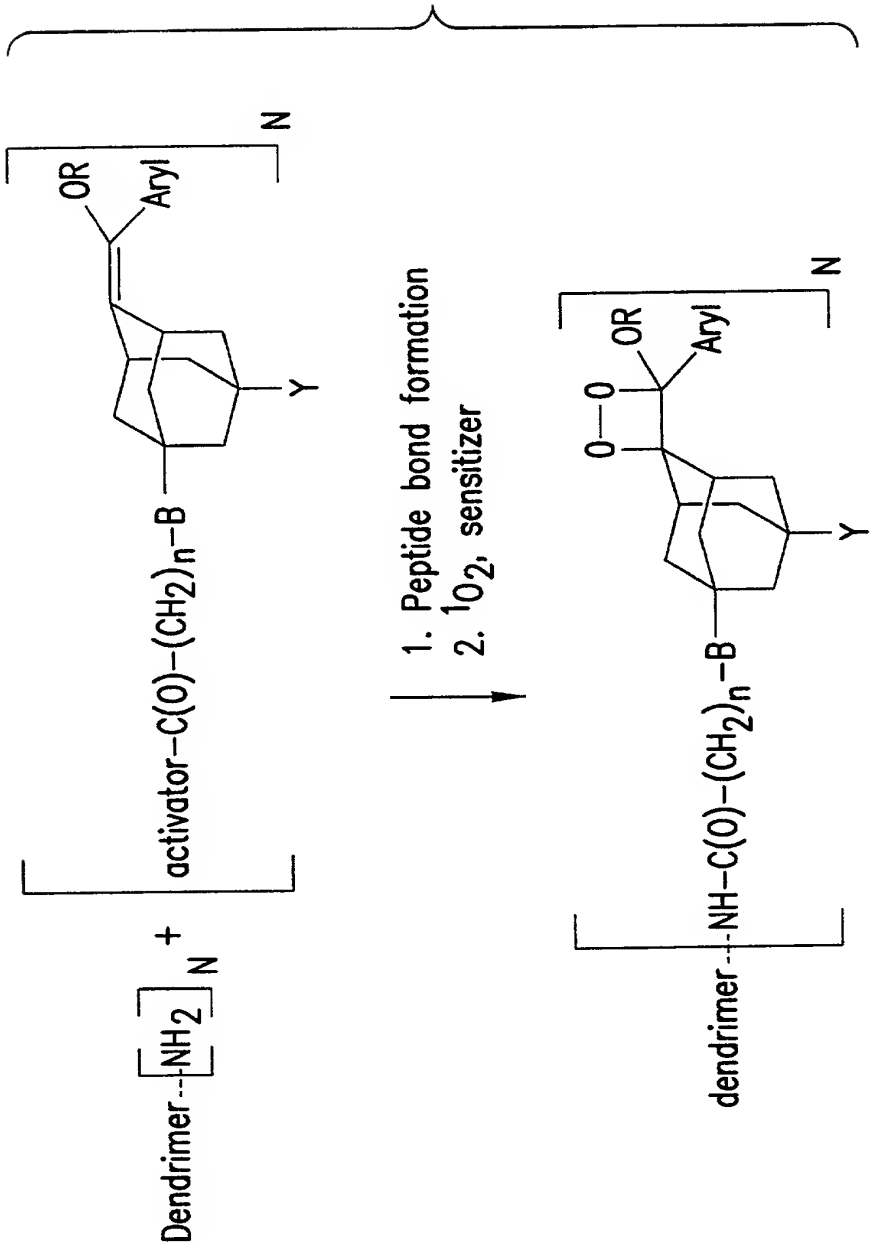
Dendrimer-[NH2]N +
activator–C(O)–(CH2)n–B
OR
Aryl
Y
N
1. Peptide bond formation
2. 1O2, sensitizer
dendrimer-[NH–C(O)–(CH2)n–B
O—O
OR
Aryl
Y
N

FIG.4B

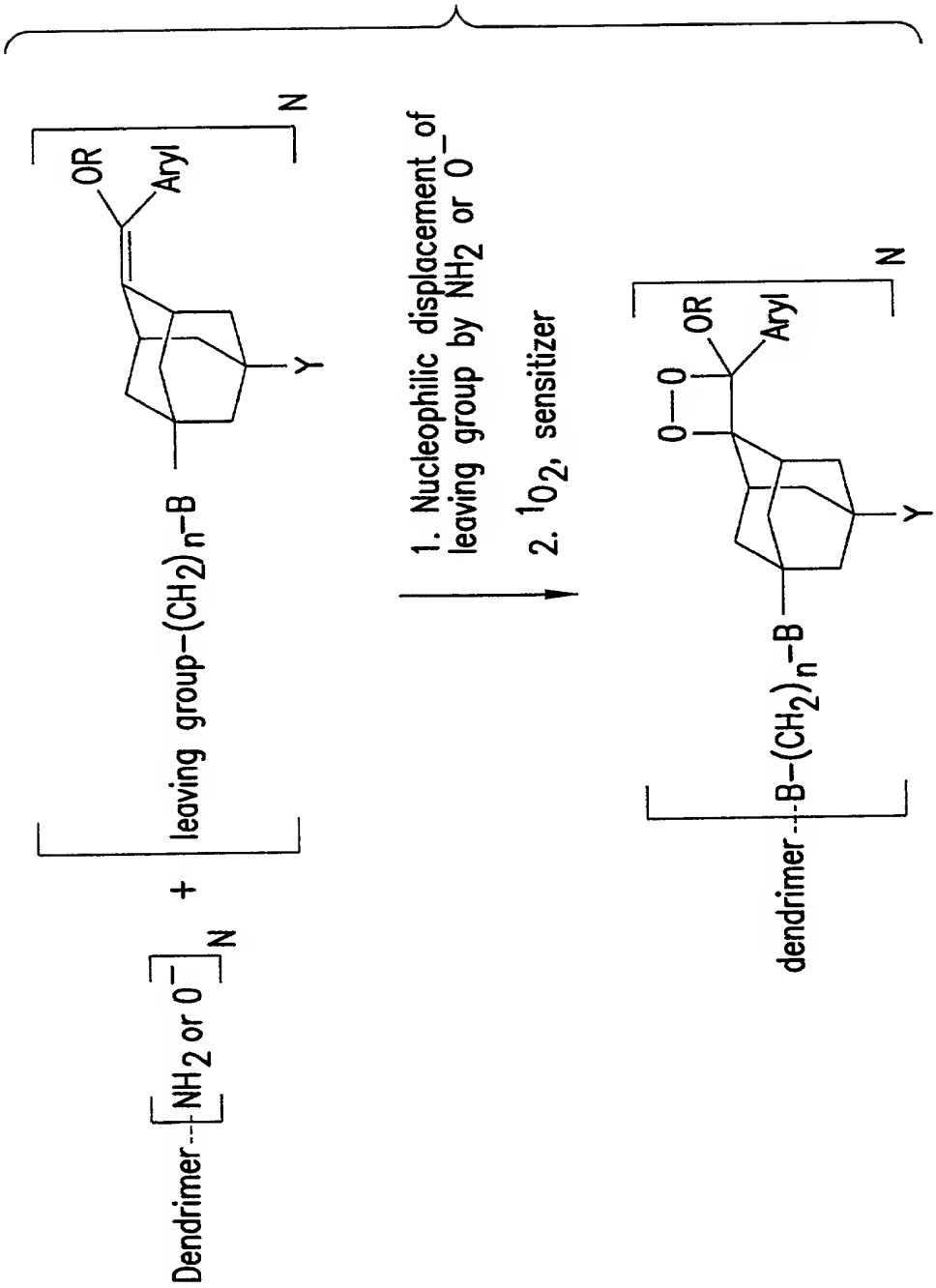
Dendrimer
NH2 or O−
N
+
leaving group−(CH2)n−B
OR
Aryl
Y
N
1. Nucleophilic displacement of leaving group by NH2 or O−
2. 1O2, sensitizer
dendrimer
B−(CH2)n−B
O—O
OR
Aryl
Y
N

FIG.4C

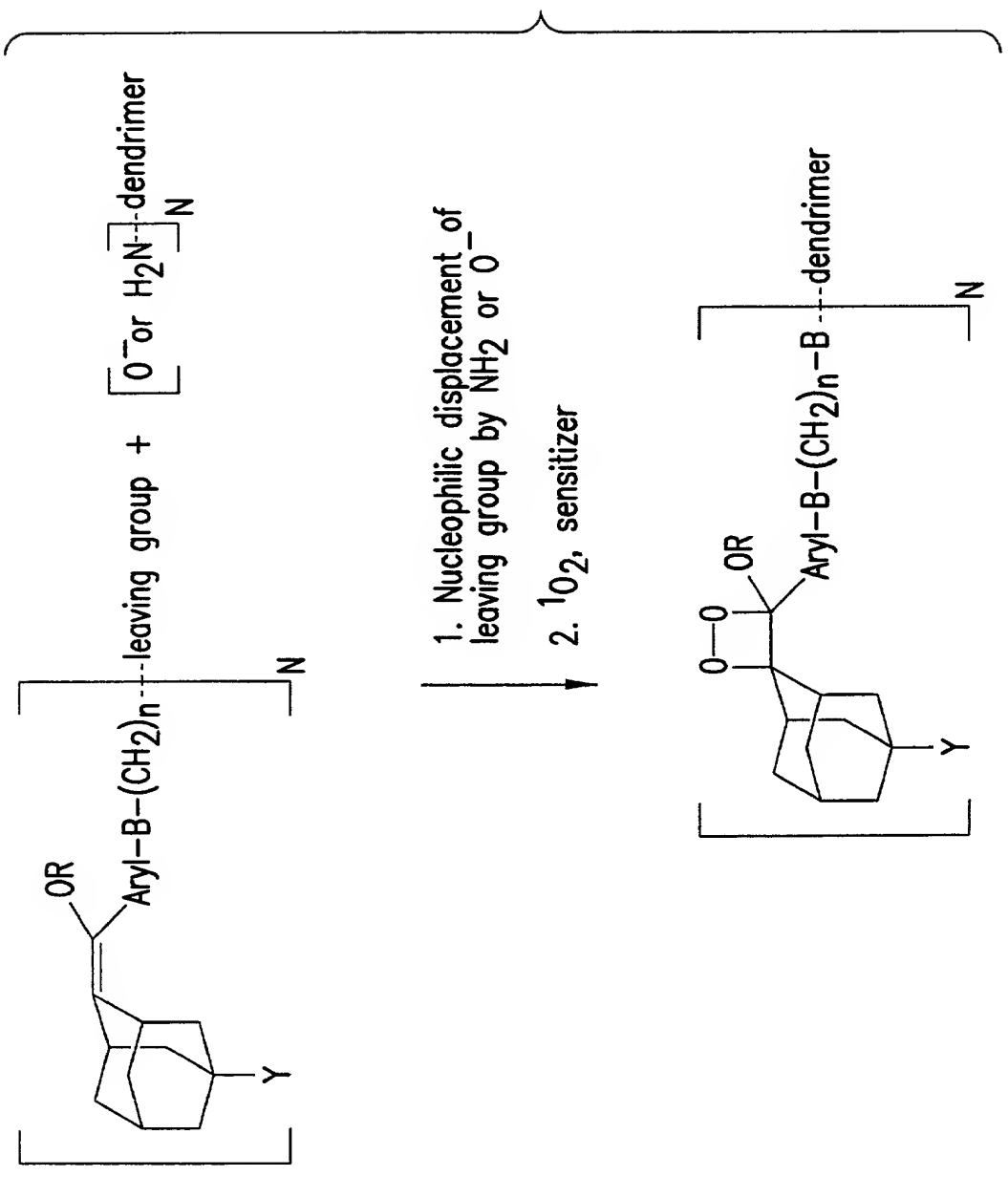
OR
Aryl–B–(CH2)n
leaving group
+
O⁻ or H2N
dendrimer
N
1. Nucleophilic displacement of leaving group by NH2 or O⁻
2. 1O2, sensitizer
O—O
OR
Aryl–B–(CH2)n–B
dendrimer
N
Y

FIG.4D

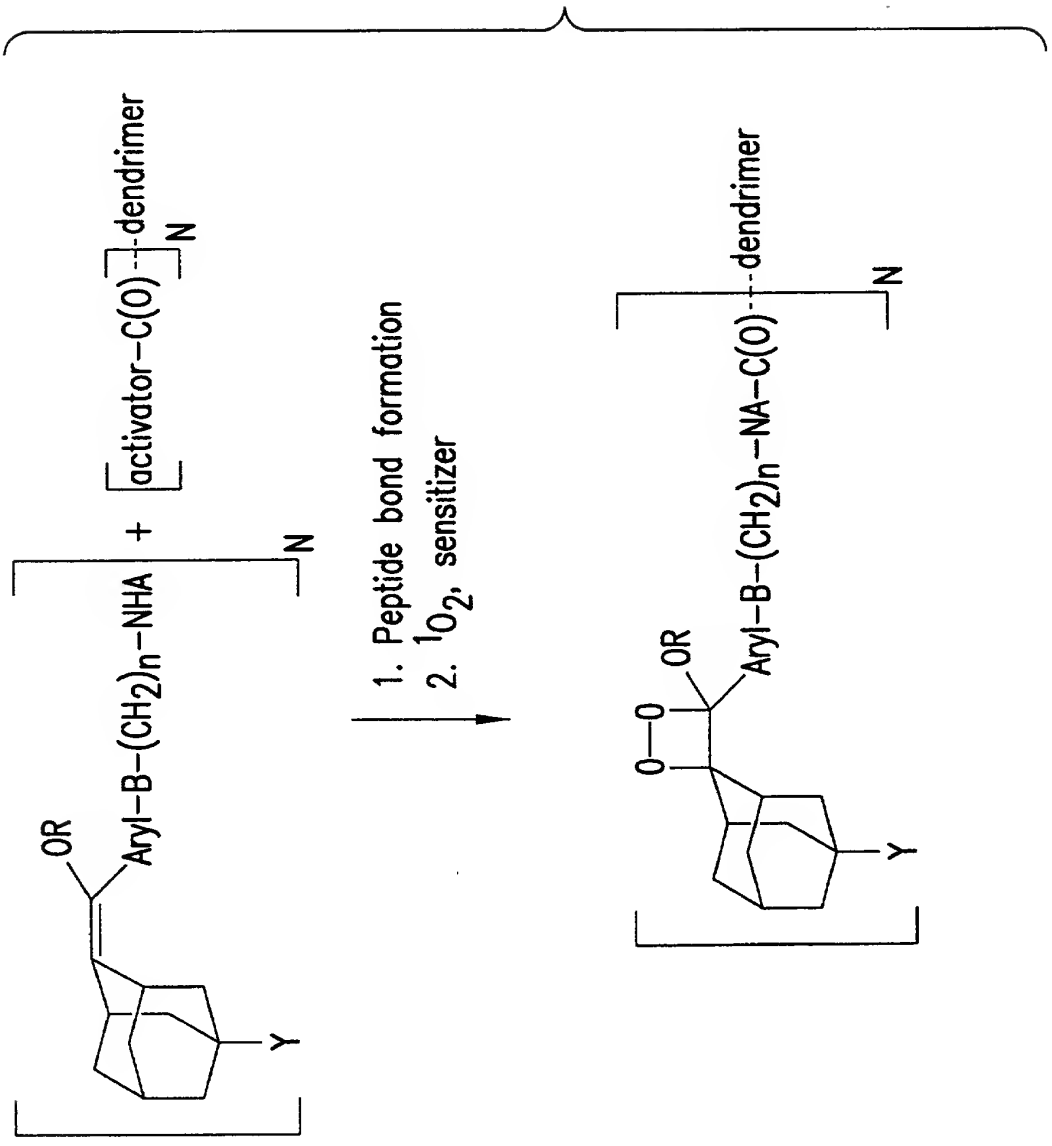
OR
Aryl–B–(CH2)n–NHA
N
+
activator–C(0)
dendrimer
N
1. Peptide bond formation
2. 1O2, sensitizer
O—O
OR
Aryl–B–(CH2)n–NA–C(0)
dendrimer
N
Y
Y

FIG.4E

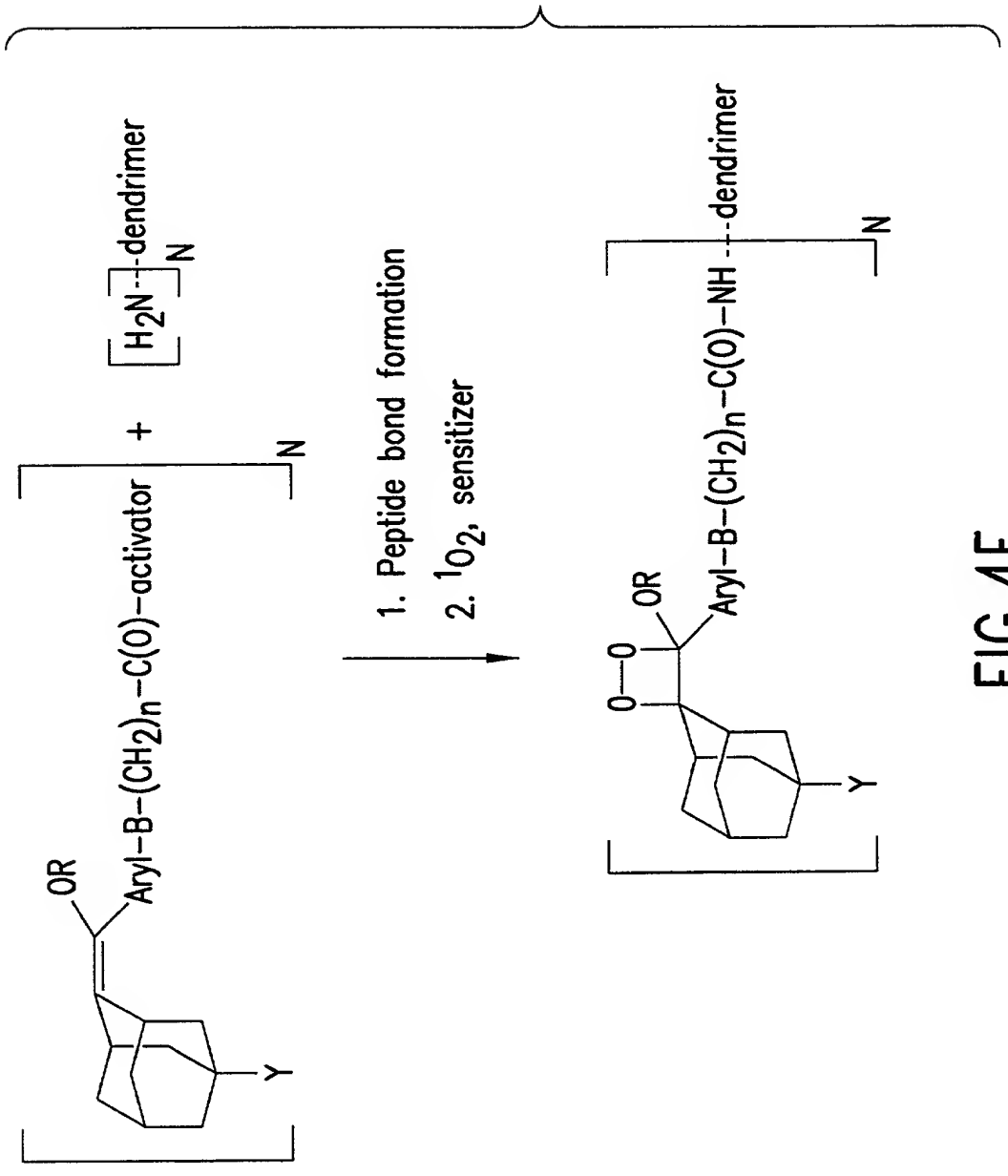
OR
Aryl–B–(CH2)n–C(0)–activator
N
+
H2N
dendrimer
N
1. Peptide bond formation
2. 1O2, sensitizer
O
O
OR
Aryl–B–(CH2)n–C(0)–NH
dendrimer
N
Y
Y

FIG.4F

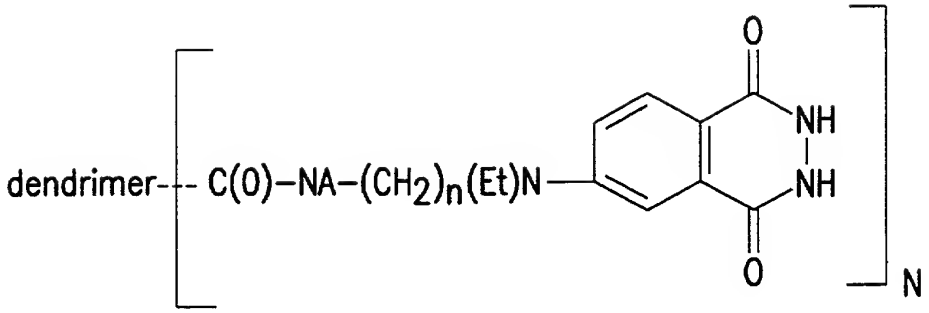

FIG.5A

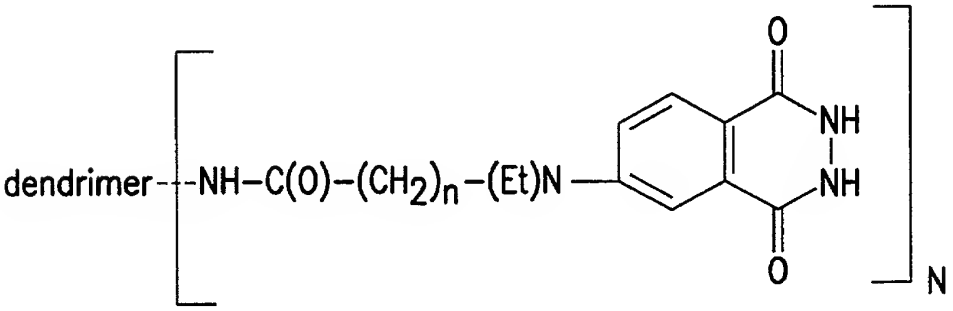

FIG.5B

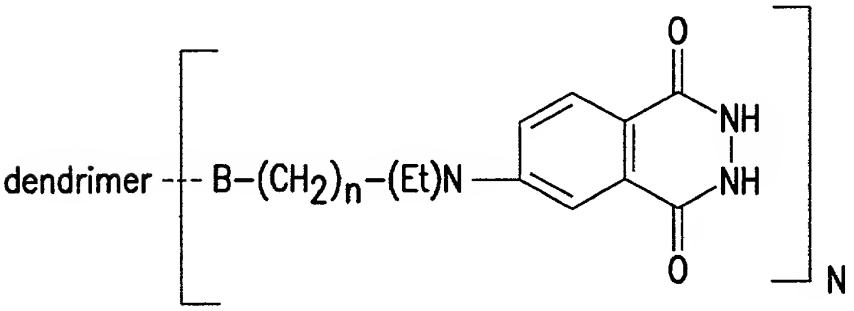

FIG.5C

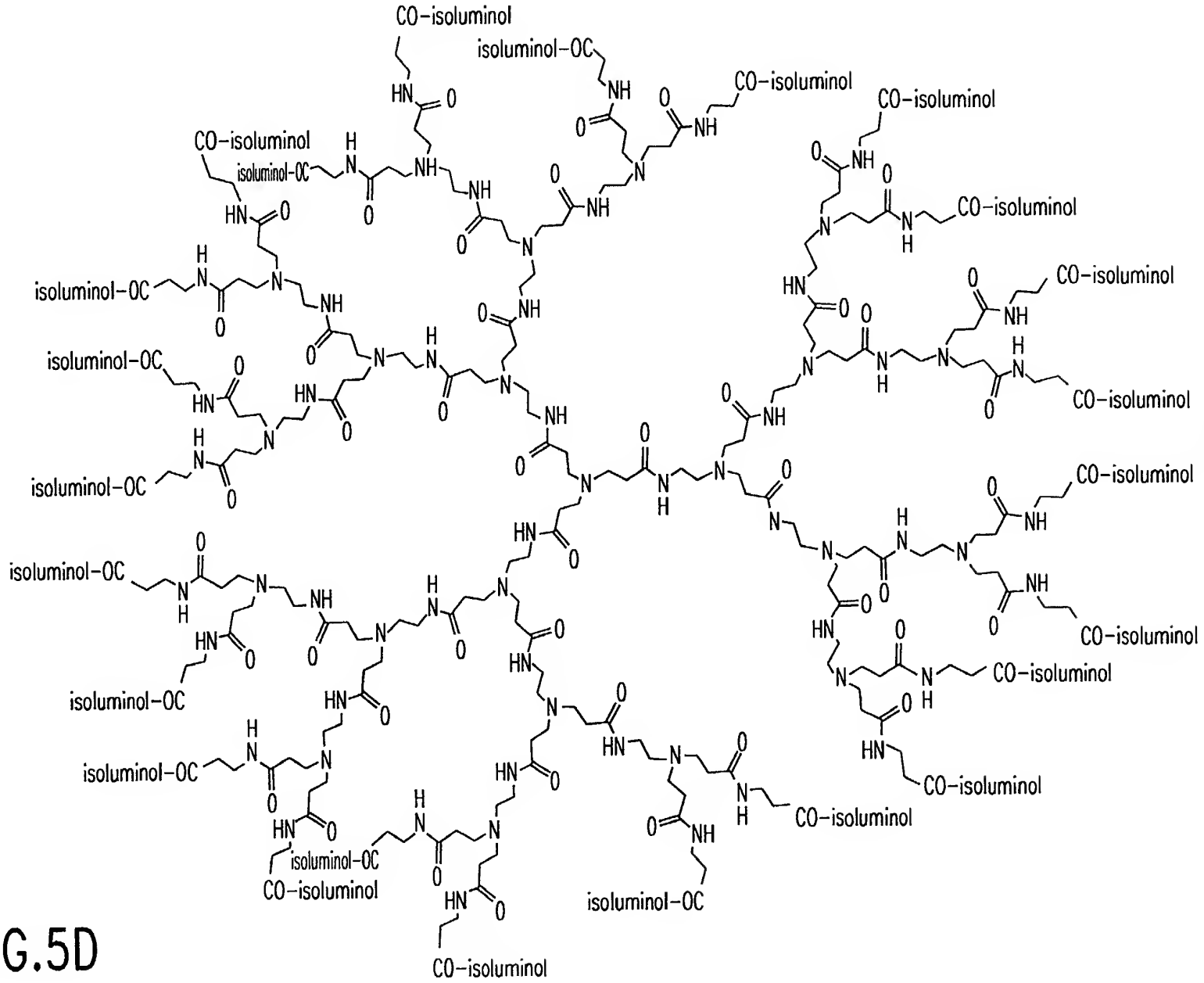

FIG.5D

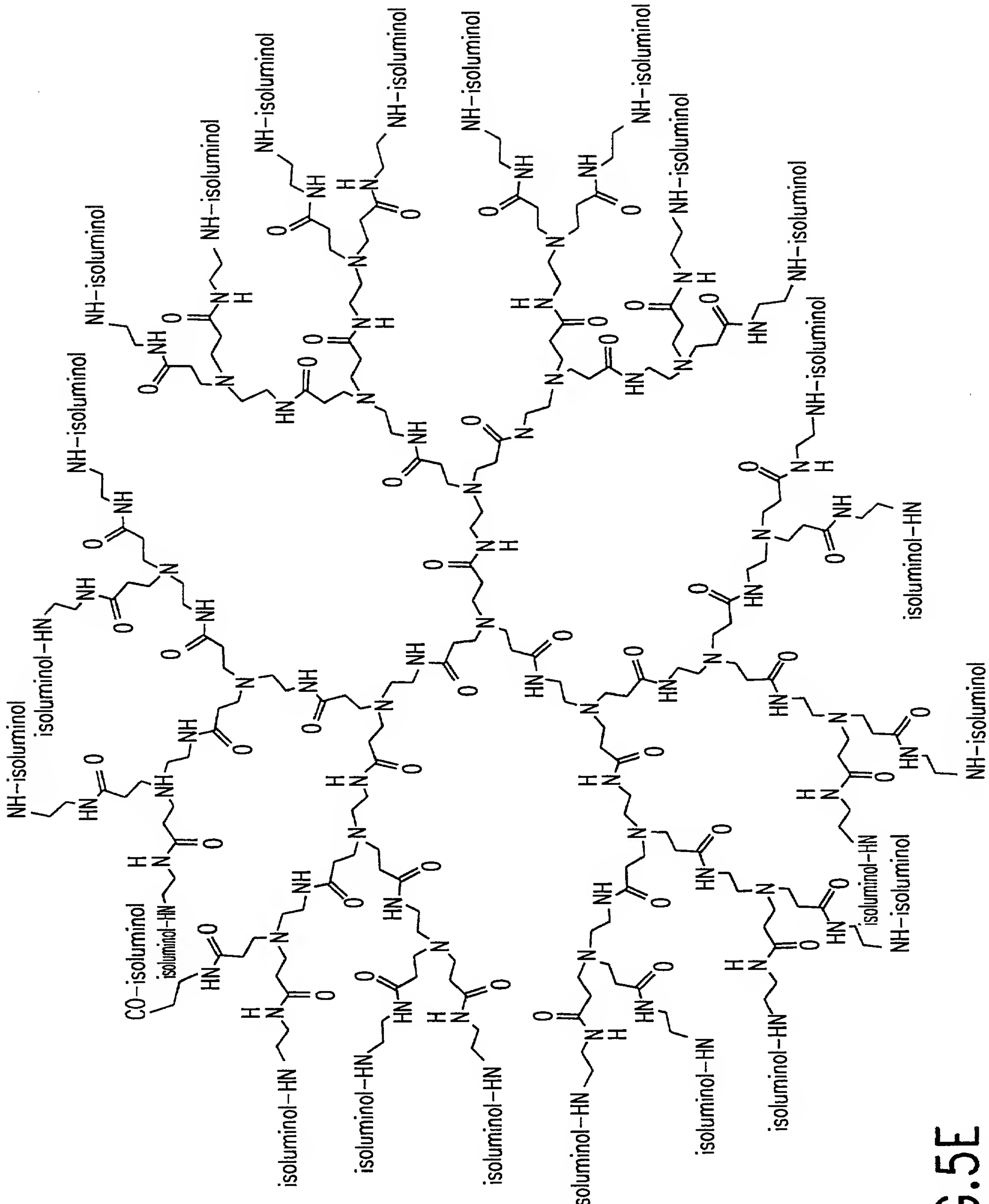

FIG.5E

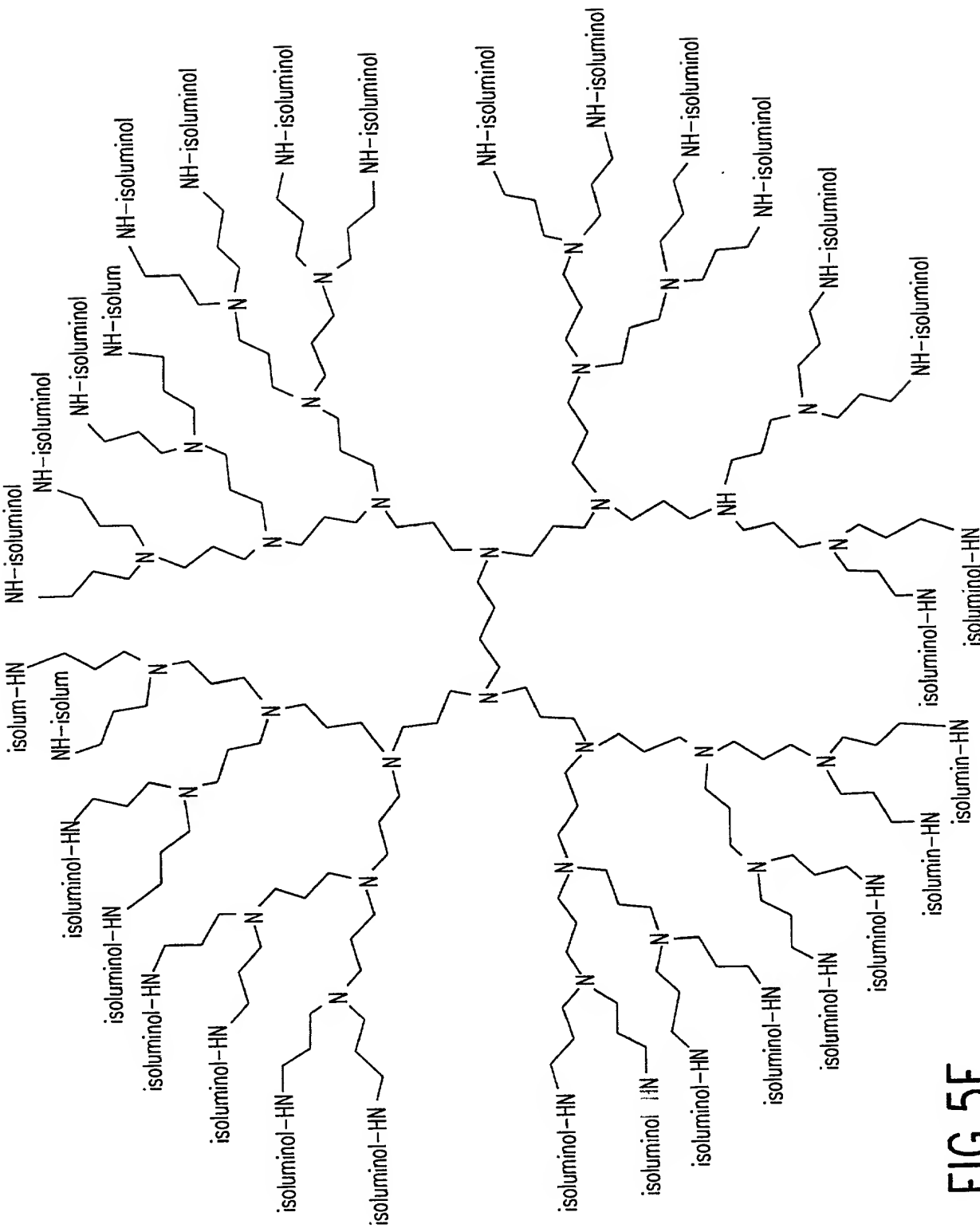
isolum-HN
NH-isolum
NH-isoluminol
isoluminol-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN
NH-isoluminol
NH-isolum
NH-isoluminol
NH-isoluminol
NH-isoluminol
NH-isoluminol
NH-isoluminol
NH-isoluminol
NH-isoluminol
NH-isoluminol
NH-isoluminol
NH-isoluminol
NH-isoluminol
isoluminol-HN
isolumin-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN
isoluminol-HN

FIG.5F

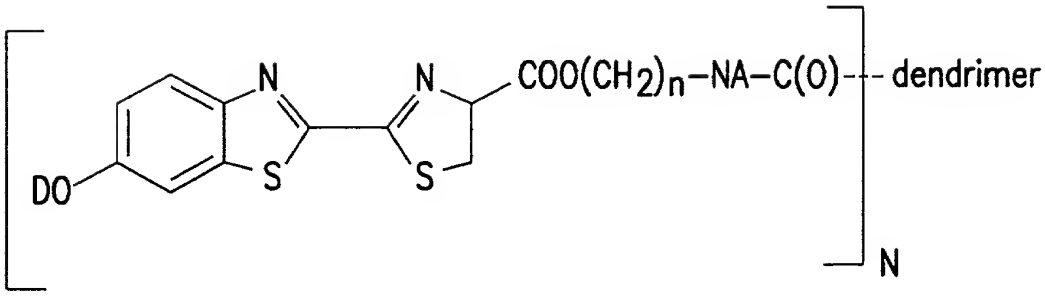

FIG.5G

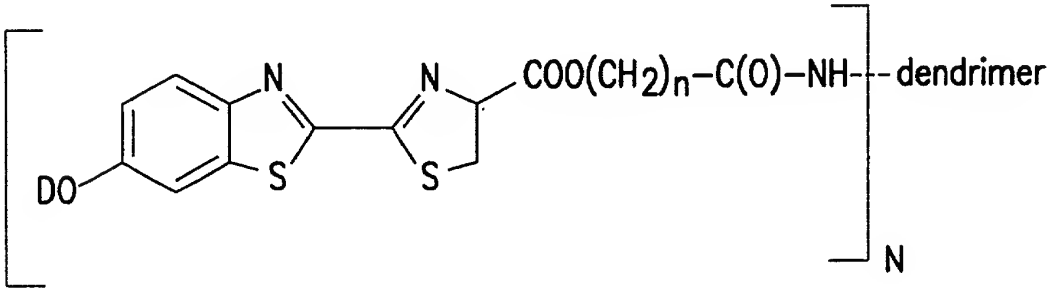

FIG.5H

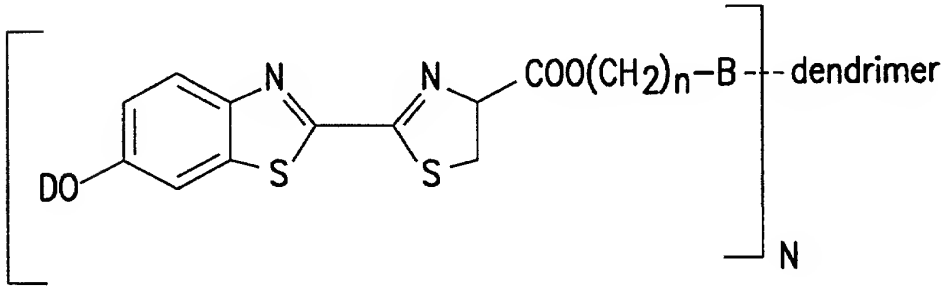

FIG.5I

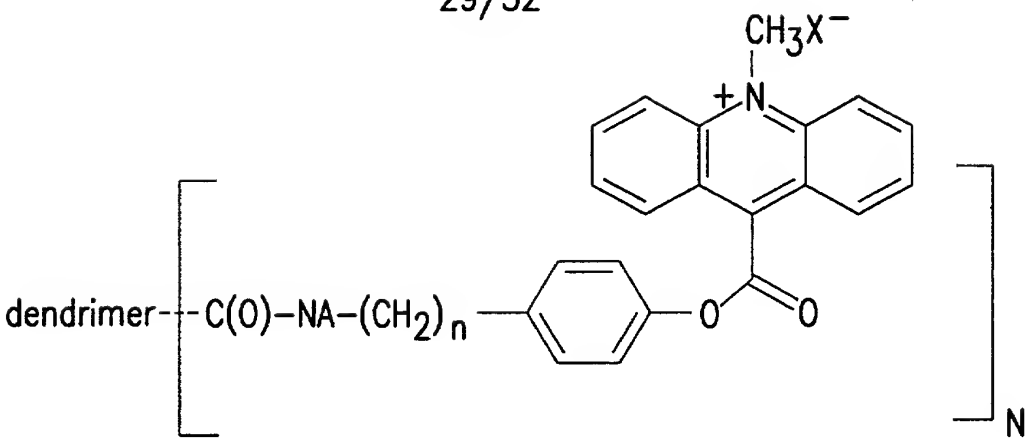

FIG.6A

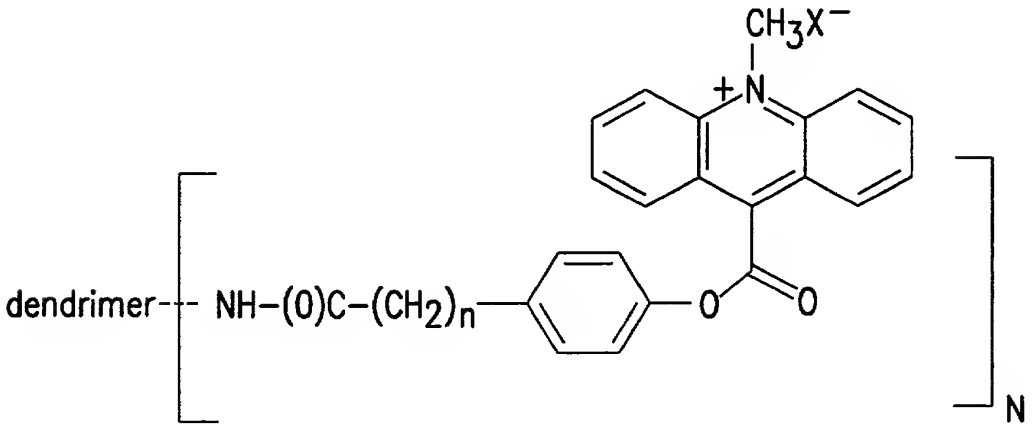

FIG.6B

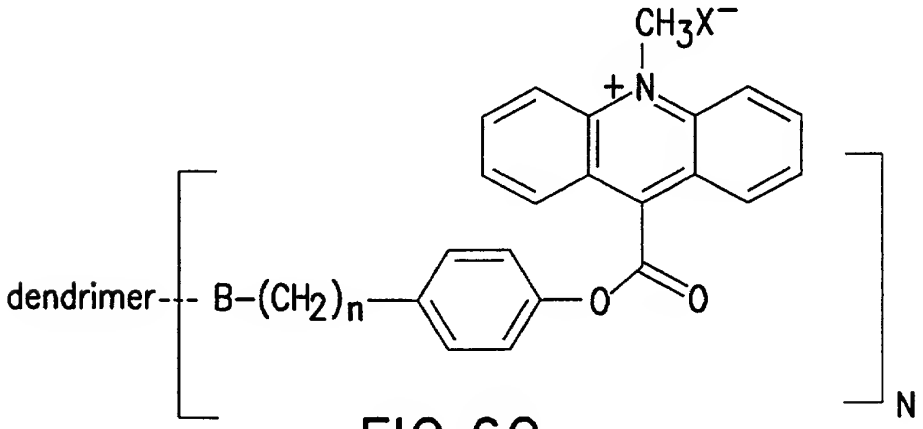

FIG.6C

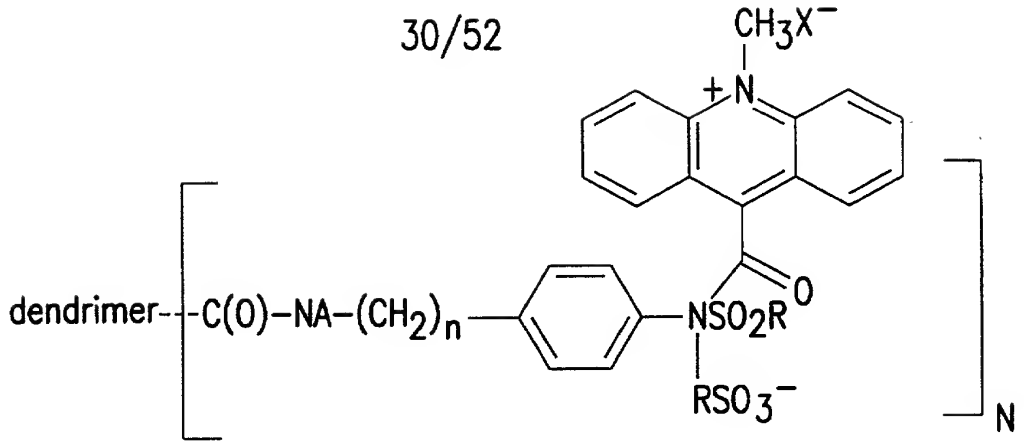

FIG.6D

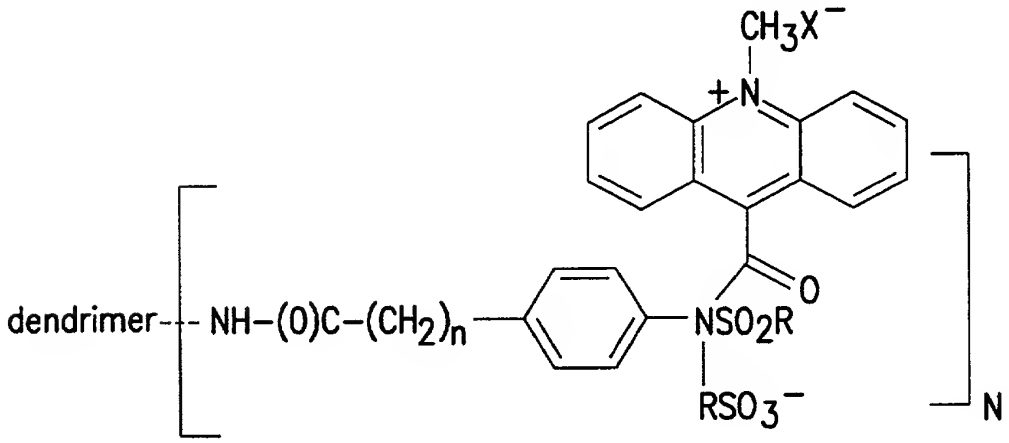

FIG.6E

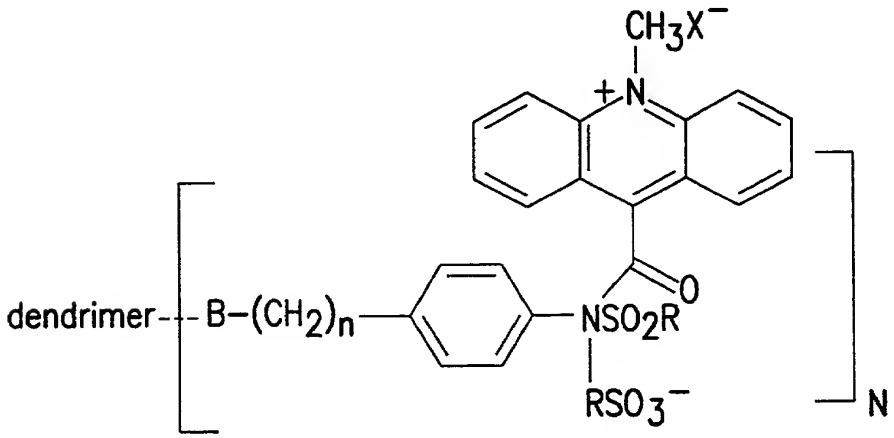

FIG.6F

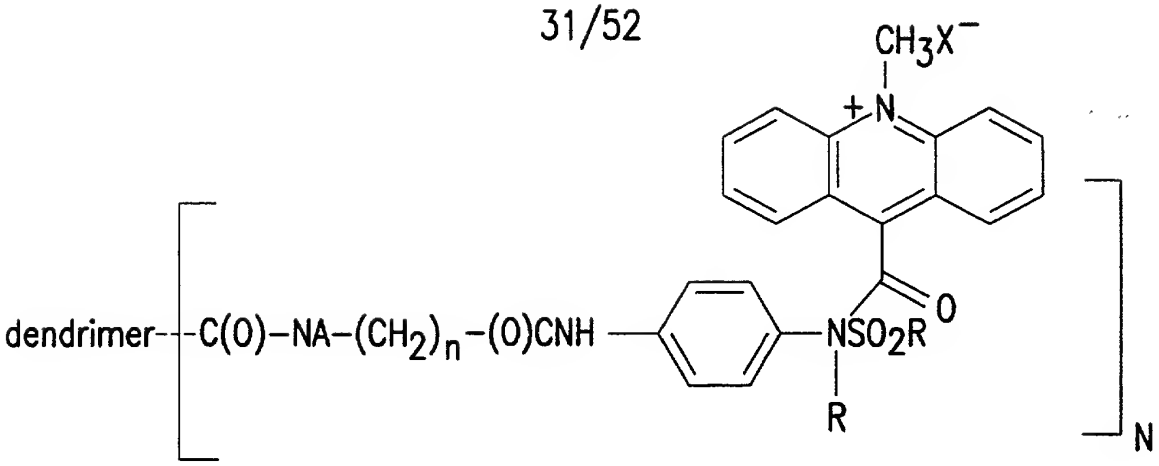

FIG.6G

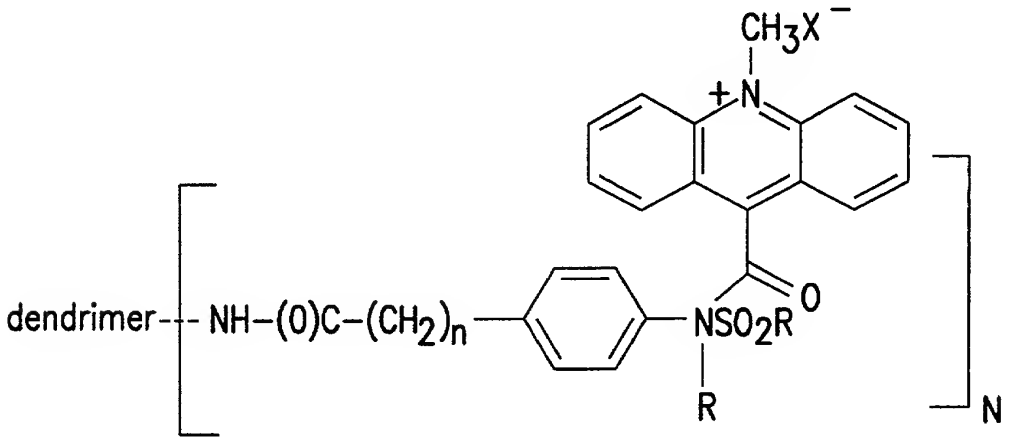

FIG.6H

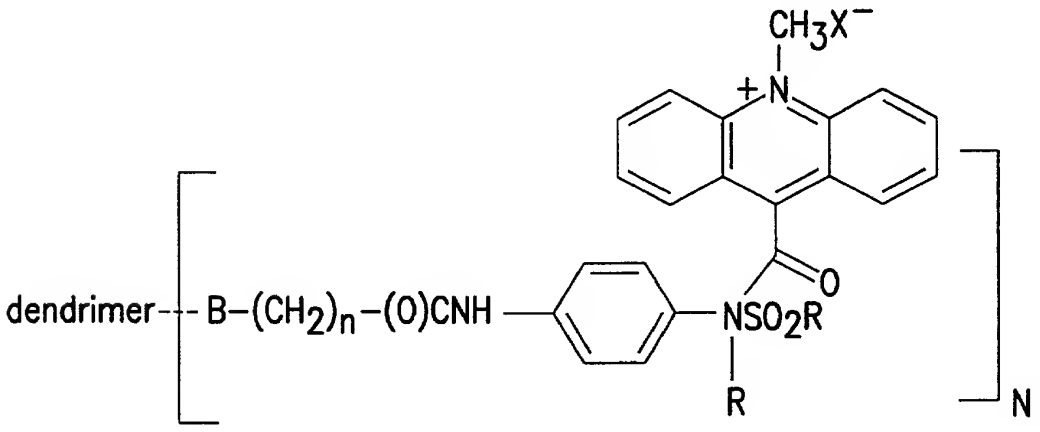

FIG.6I

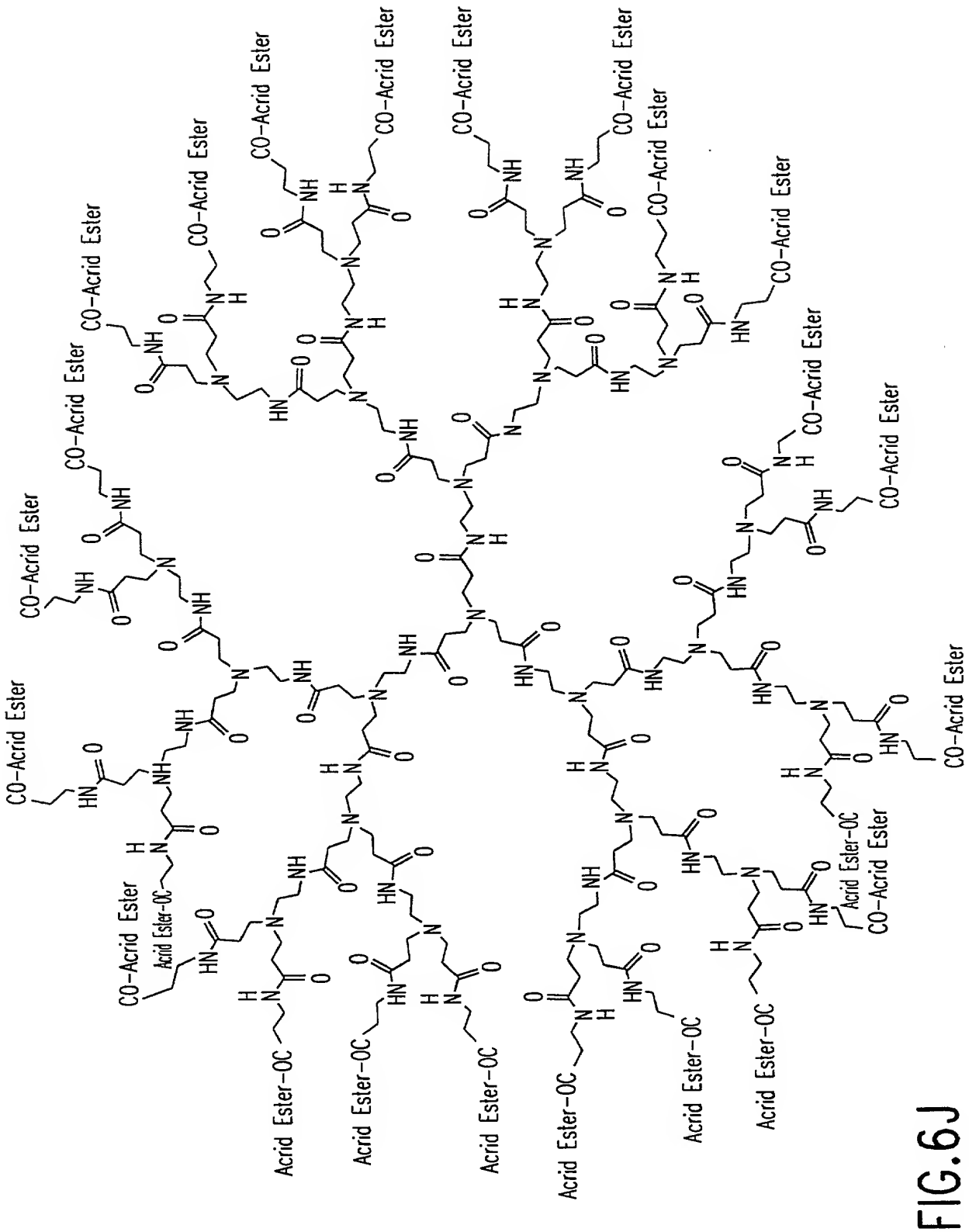

FIG.6J

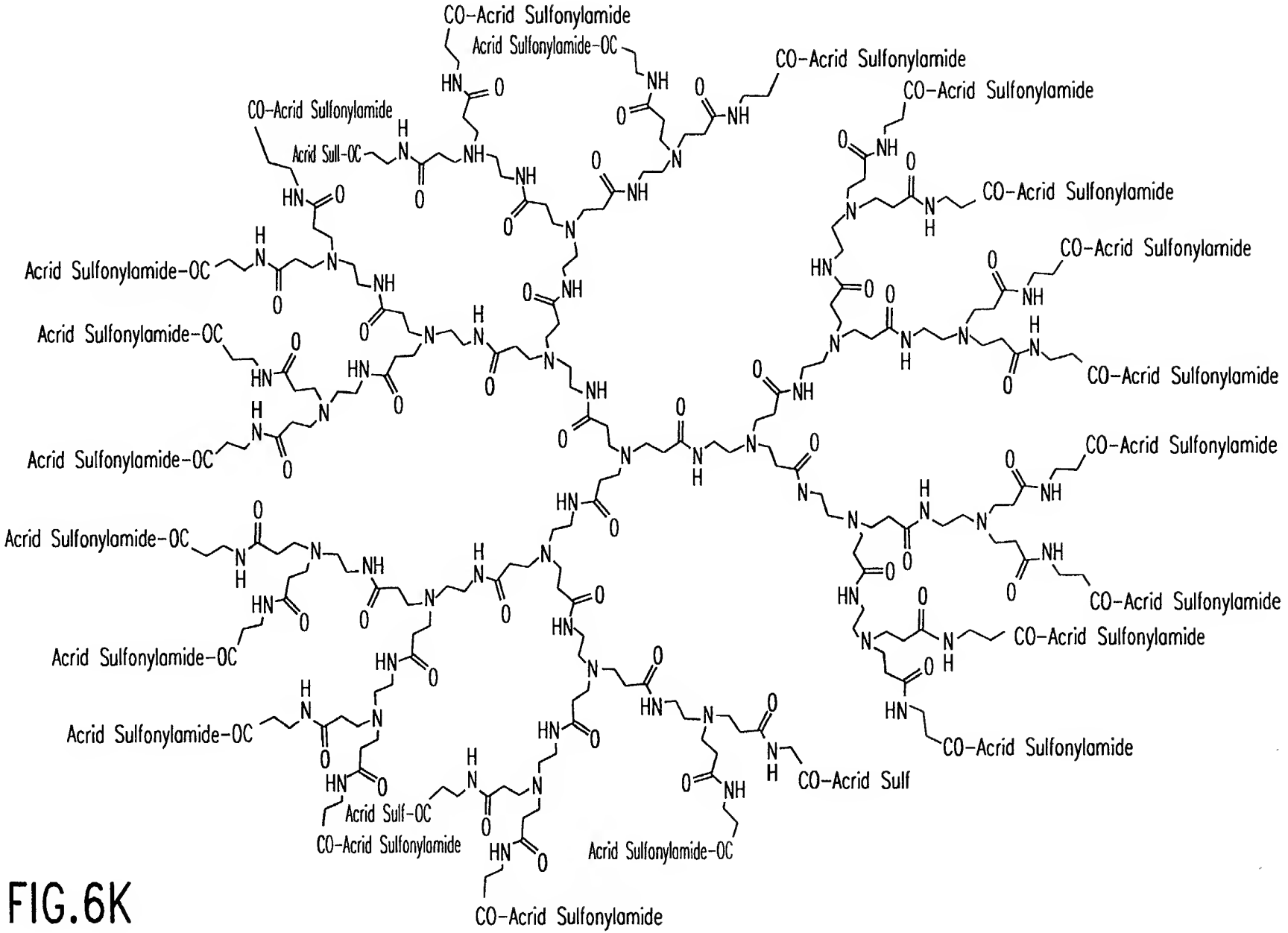
CO-Acrid Sulfonylamide
Acrid Sulfonylamide-OC
Acrid Sulf-OC
Acrid Sulfonylamide-OC
CO-Acrid Sulf

FIG.6K

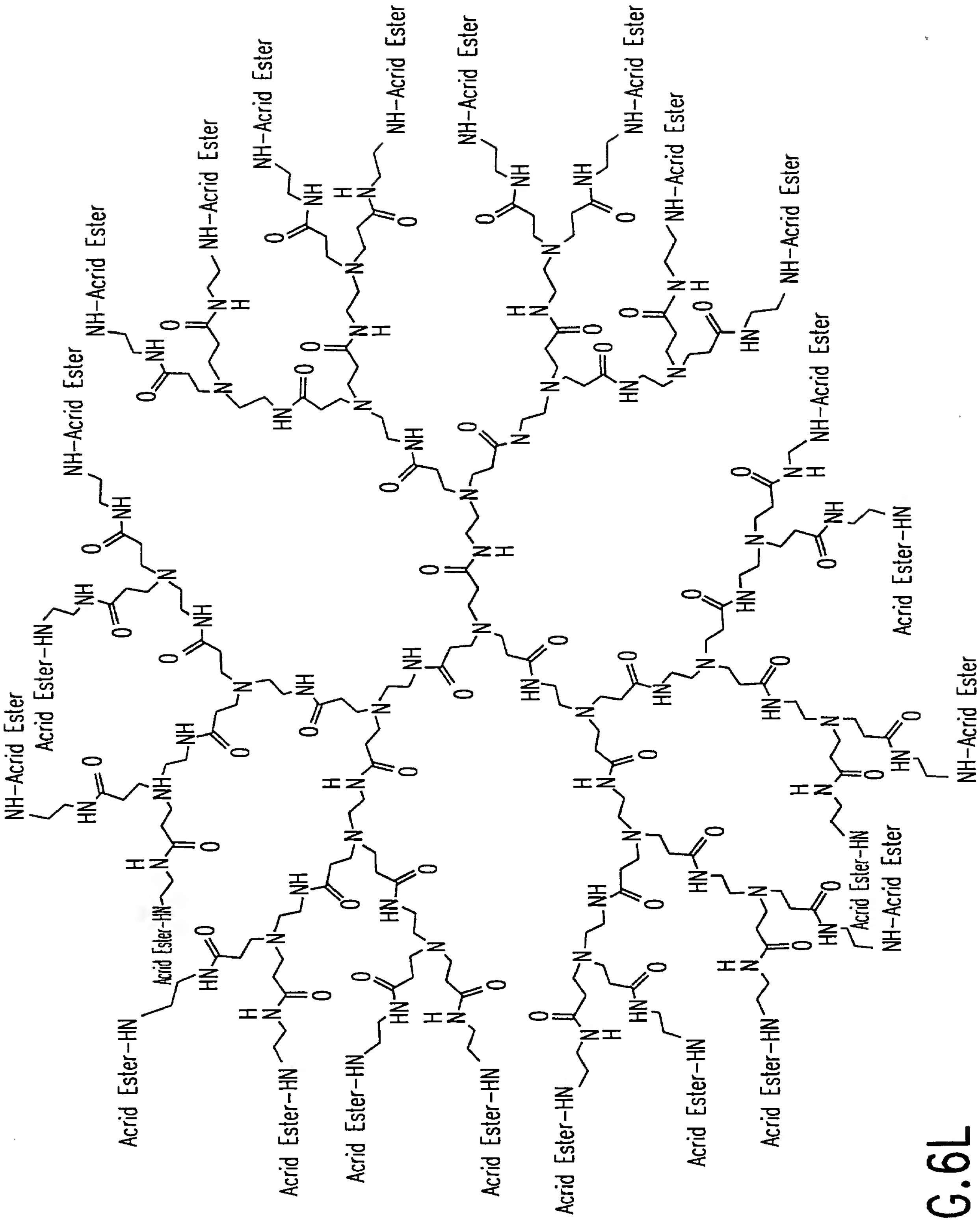

FIG.6L

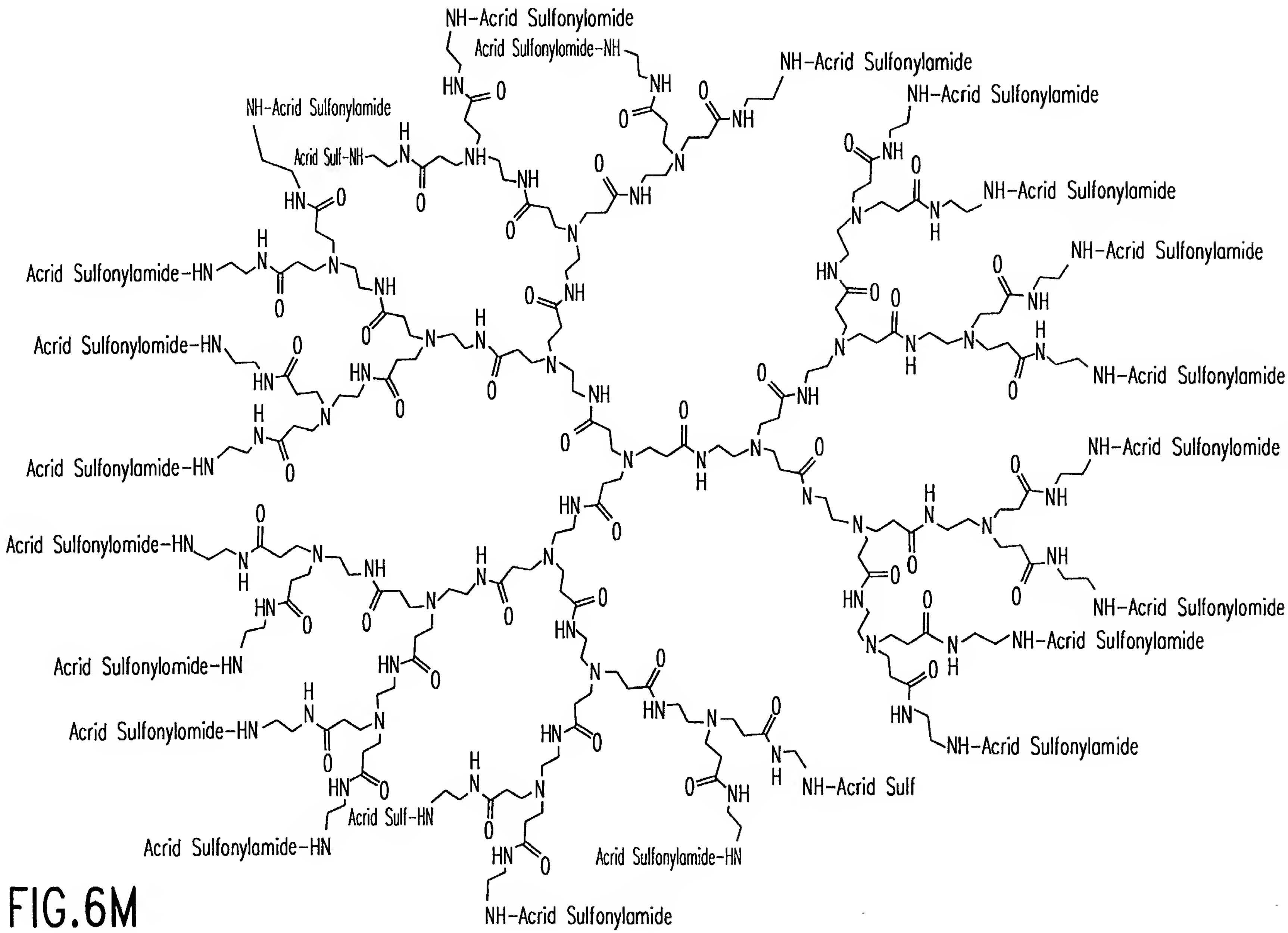

FIG.6M

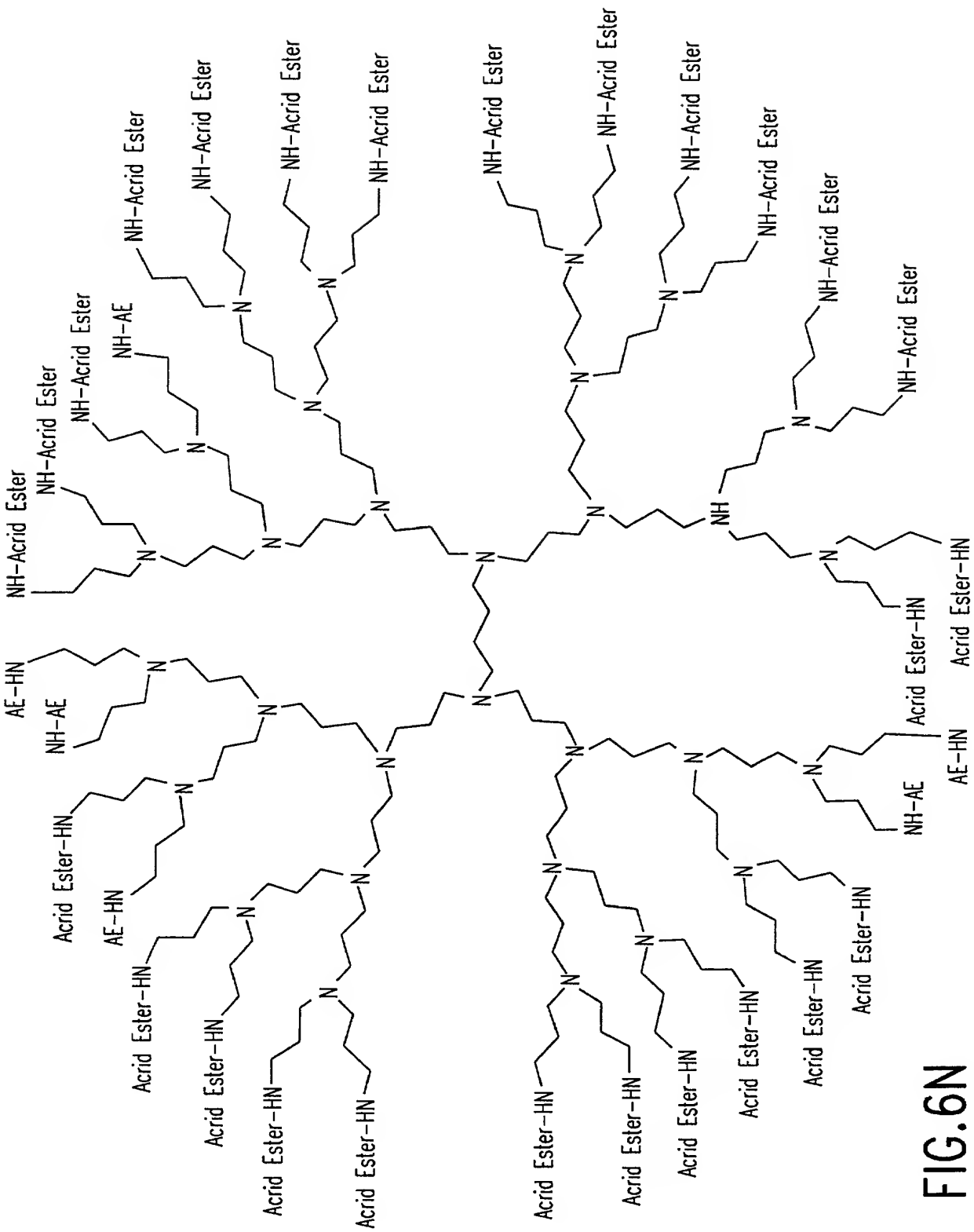
NH-Acrid Ester
NH-Acrid Ester
NH-Acrid Ester
NH-AE
NH-Acrid Ester
NH-Acrid Ester
NH-Acrid Ester
AE-HN
NH-AE
Acrid Ester-HN
AE-HN
Acrid Ester-HN
Acrid Ester-HN
Acrid Ester-HN
Acrid Ester-HN
Acrid Ester-HN
Acrid Ester-HN
Acrid Ester-HN
Acrid Ester-HN
NH-Acrid Ester
NH-Acrid Ester
NH-Acrid Ester
NH-Acrid Ester
NH-Acrid Ester
NH-Acrid Ester
NH-AE
AE-HN
Acrid Ester-HN
Acrid Ester-HN

FIG.6N

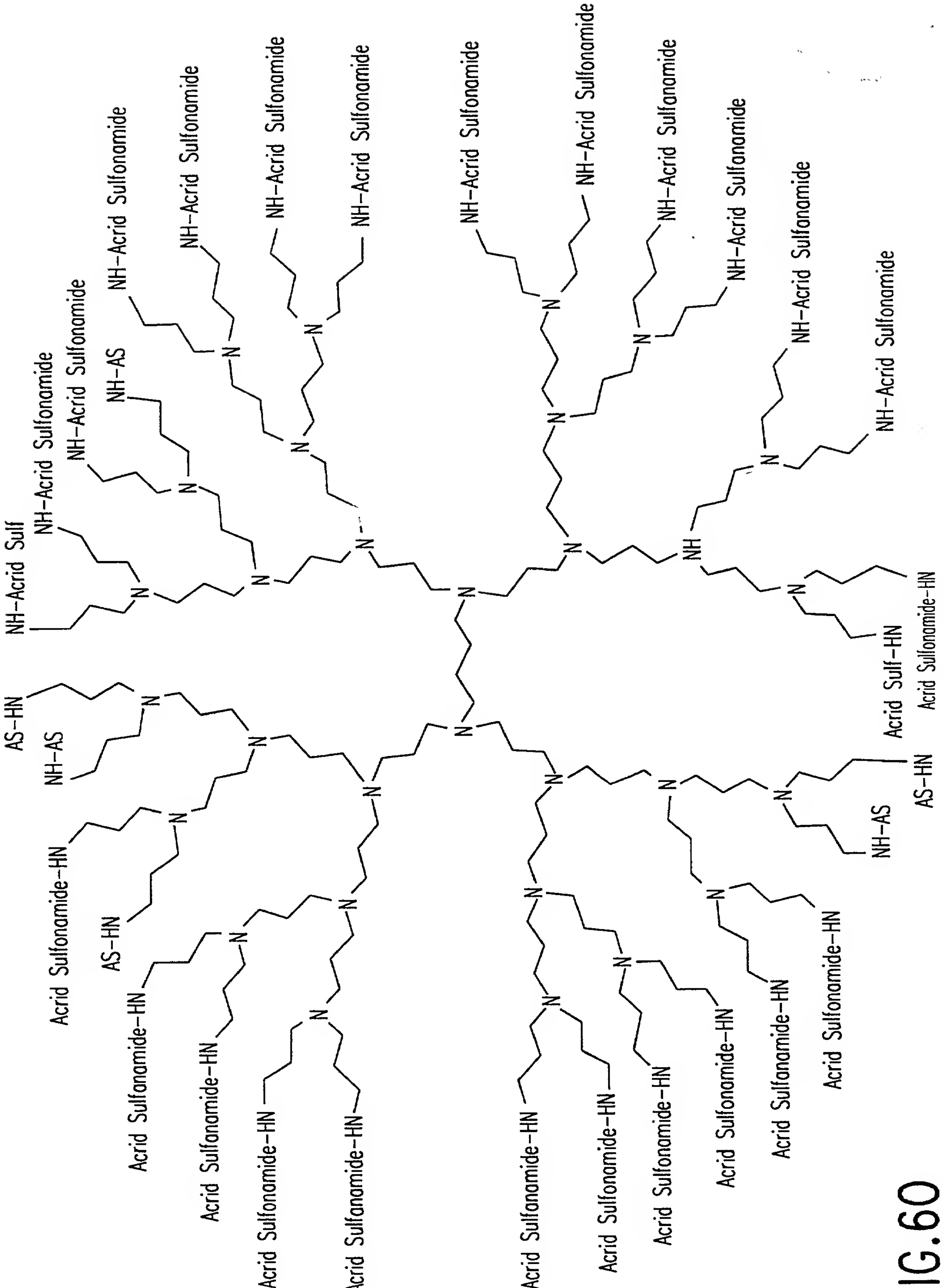
NH-Acrid Sulfonamide
NH-Acrid Sulfonamide
NH-Acrid Sulfonamide
NH-Acrid Sulfonamide
NH-Acrid Sulfonamide
NH-Acrid Sulfonamide
NH-Acrid Sulfanamide
NH-Acrid Sulfanamide
NH-Acrid Sulfanamide
NH-Acrid Sulfonamide
NH-Acrid Sulfonamide
NH-Acrid Sulfonamide
NH-AS
NH-Acrid Sulfonamide
NH-Acrid Sulf
NH-Acrid Sulf
N
NH
Acrid Sulfonamide-HN
Acrid Sulf-HN
AS-HN
NH-AS
AS-HN
NH-AS
Acrid Sulfonamide-HN
AS-HN
Acrid Sulfonamide-HN
Acrid Sulfanamide-HN
Acrid Sulfanamide-HN
Acrid Sulfonamide-HN
Acrid Sulfanamide-HN
Acrid Sulfanamide-HN
Acrid Sulfonamide-HN
Acrid Sulfonamide-HN
Acrid Sulfonamide-HN
Acrid Sulfanamide-HN
Acrid Sulfonamide-HN

FIG.60

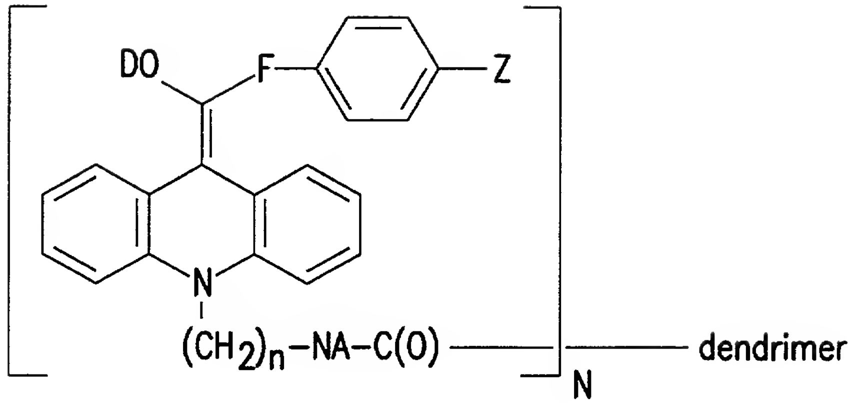

FIG.6P

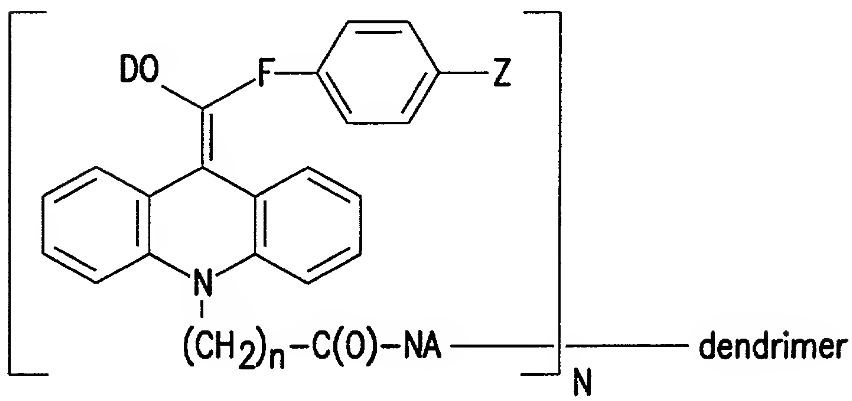

FIG.6Q

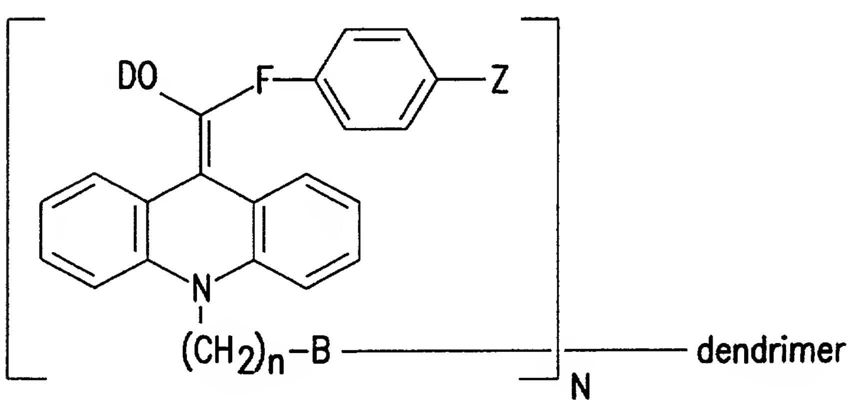

FIG.6R

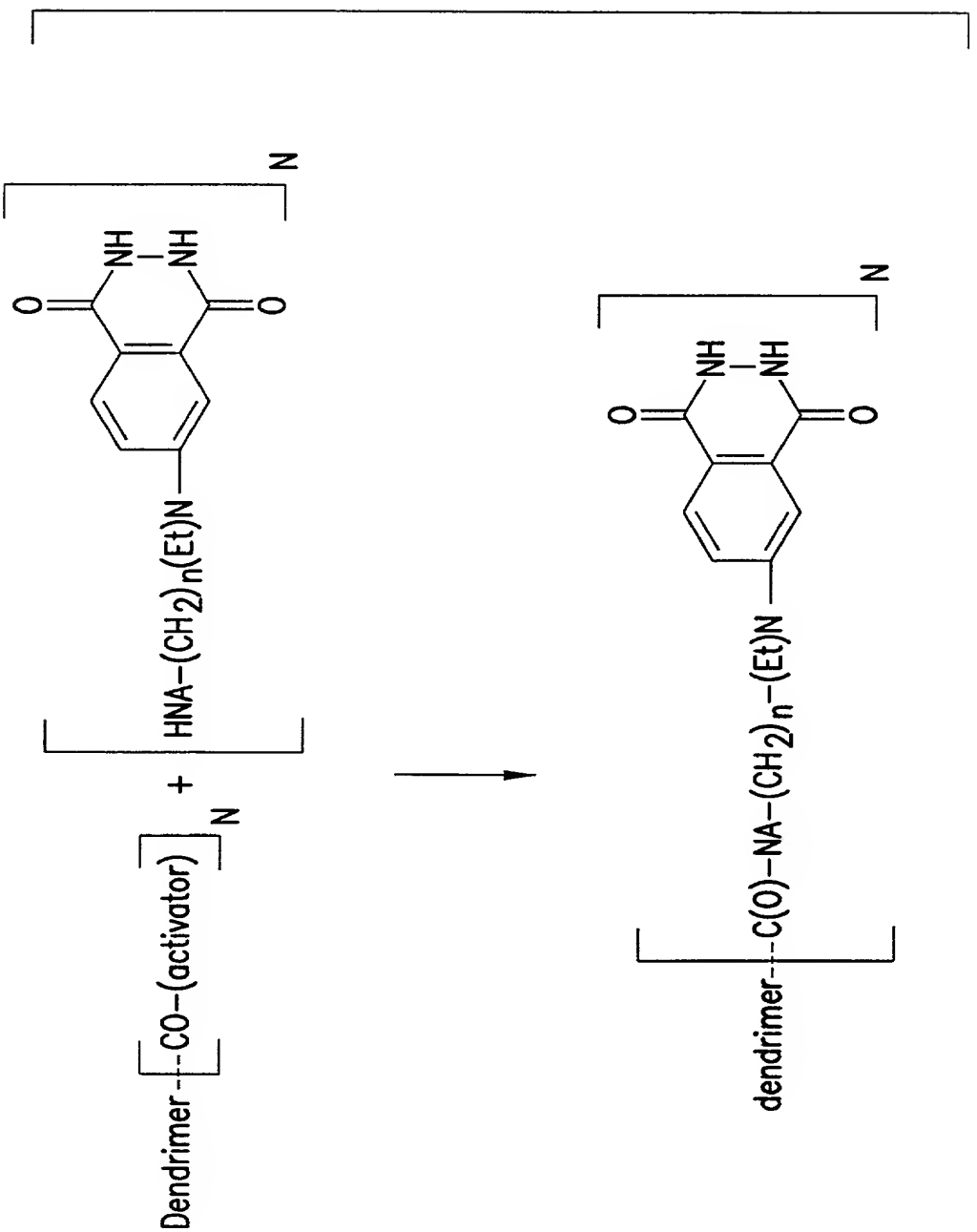
Dendrimer
CO–(activator)
N
+
HNA–(CH2)n(Et)N
NH
NH
O
O
dendrimer
C(O)–NA–(CH2)n–(Et)N

FIG.7A

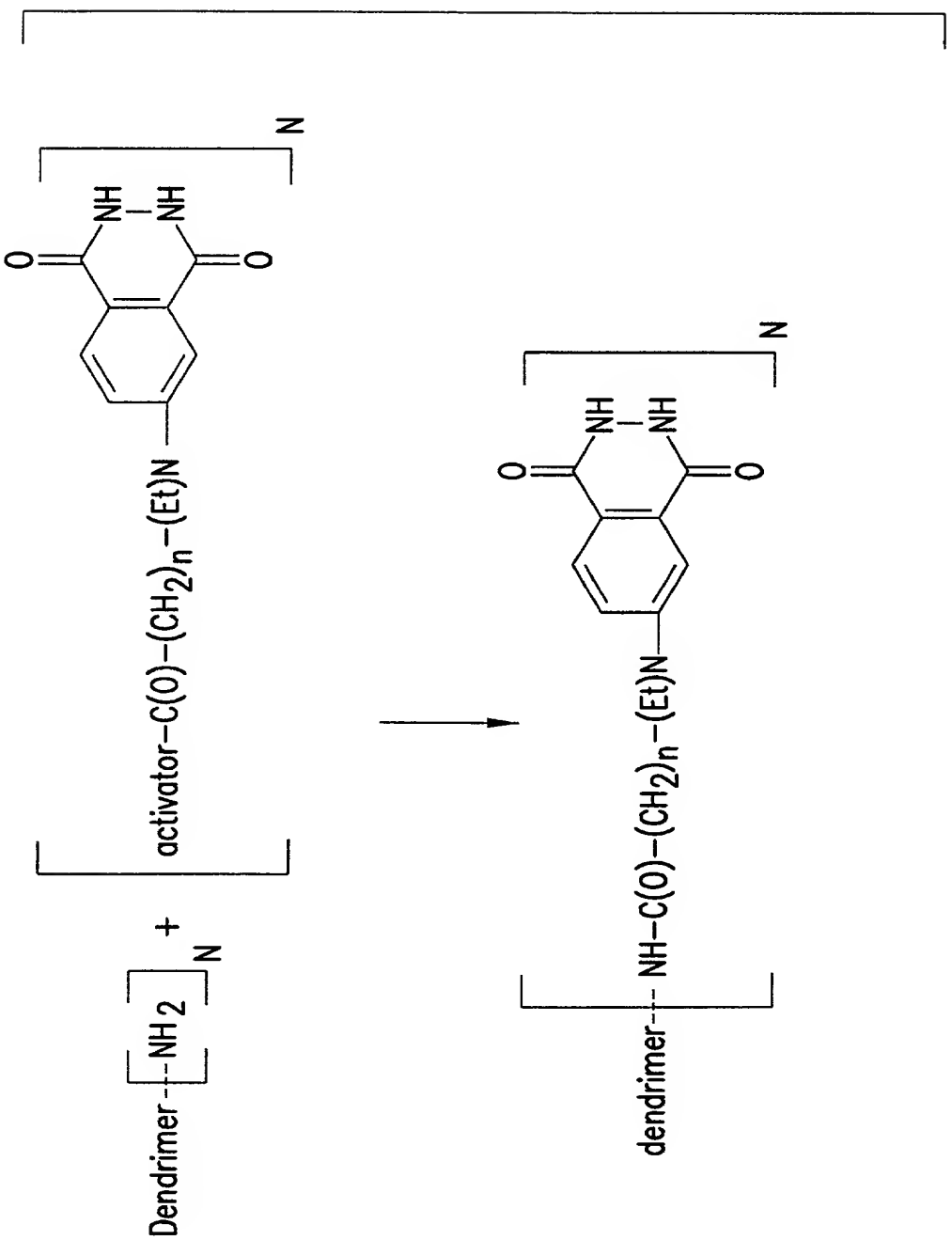
Dendrimer
NH2
N
+
activator–C(O)–(CH2)n–(Et)N
NH
NH
O
O
N
dendrimer
NH–C(O)–(CH2)n–(Et)N
NH
NH
O
O
N

FIG.7B

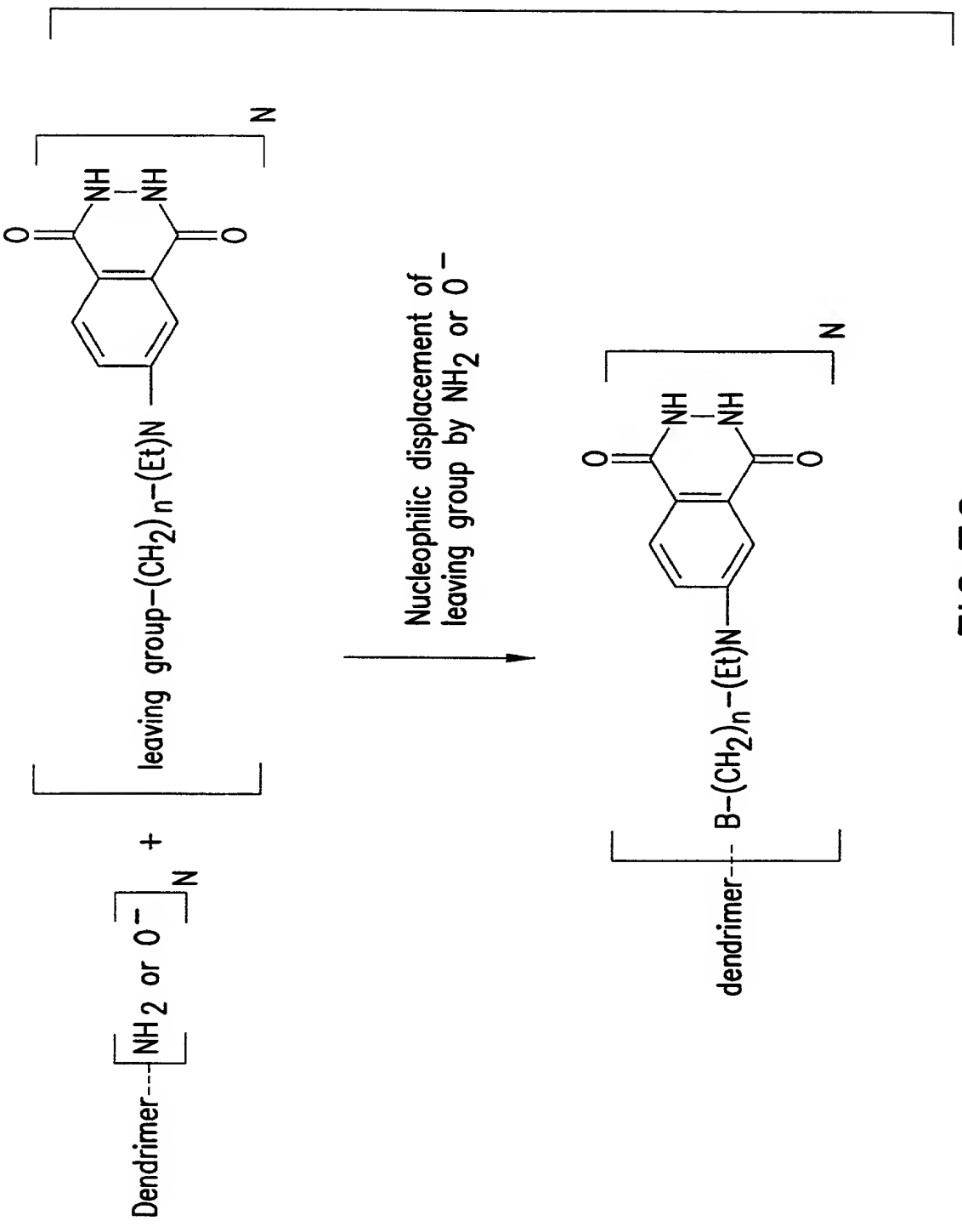
Dendrimer
NH2 or O−
N
+
leaving group–(CH2)n–(Et)N
Nucleophilic displacement of leaving group by NH2 or O−
dendrimer
B–(CH2)n–(Et)N
NH
O

FIG.7C

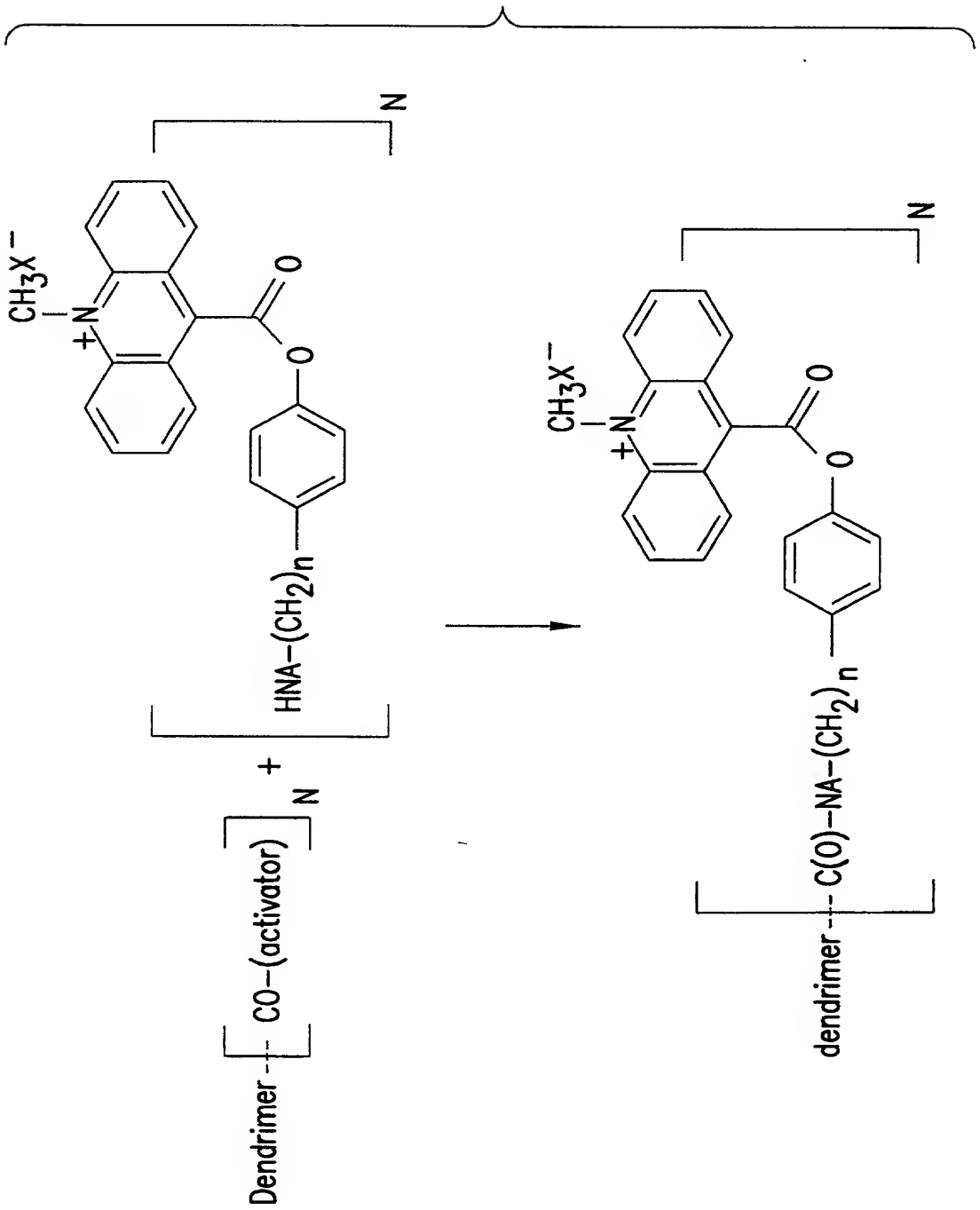
Dendrimer
CO–(activator)
N
+
HNA–(CH2)n
N
CH3X–
+N
O
O
dendrimer
C(O)–NA–(CH2)n
N
CH3X–
+N
O
O

FIG.8A

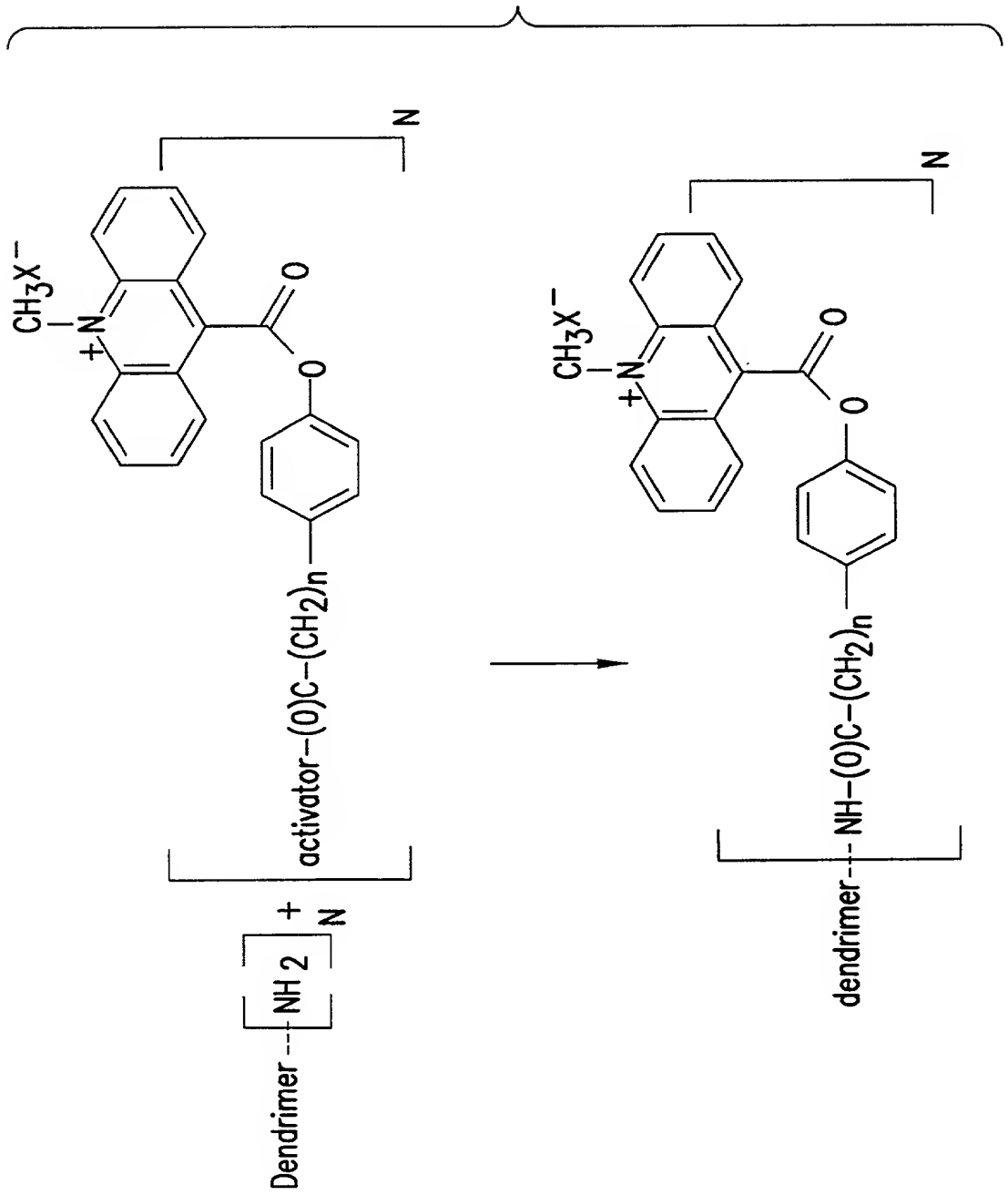

FIG.8B

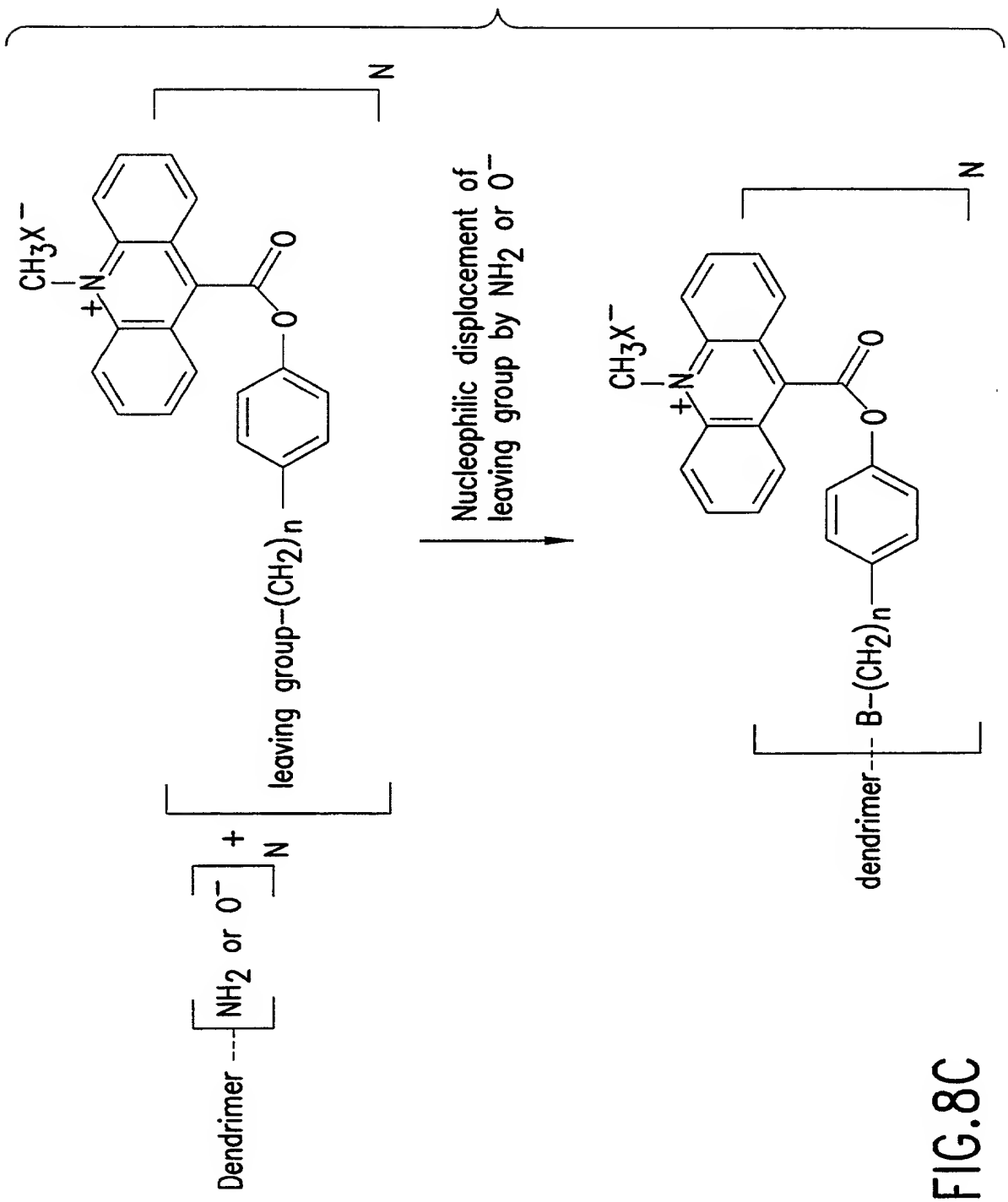
Dendrimer
NH2 or O−
N
+
N
leaving group–(CH2)n
O
O
+N
CH3X−
Nucleophilic displacement of leaving group by NH2 or O−
dendrimer
B–(CH2)n
O
O
+N
CH3X−
N

FIG.8C

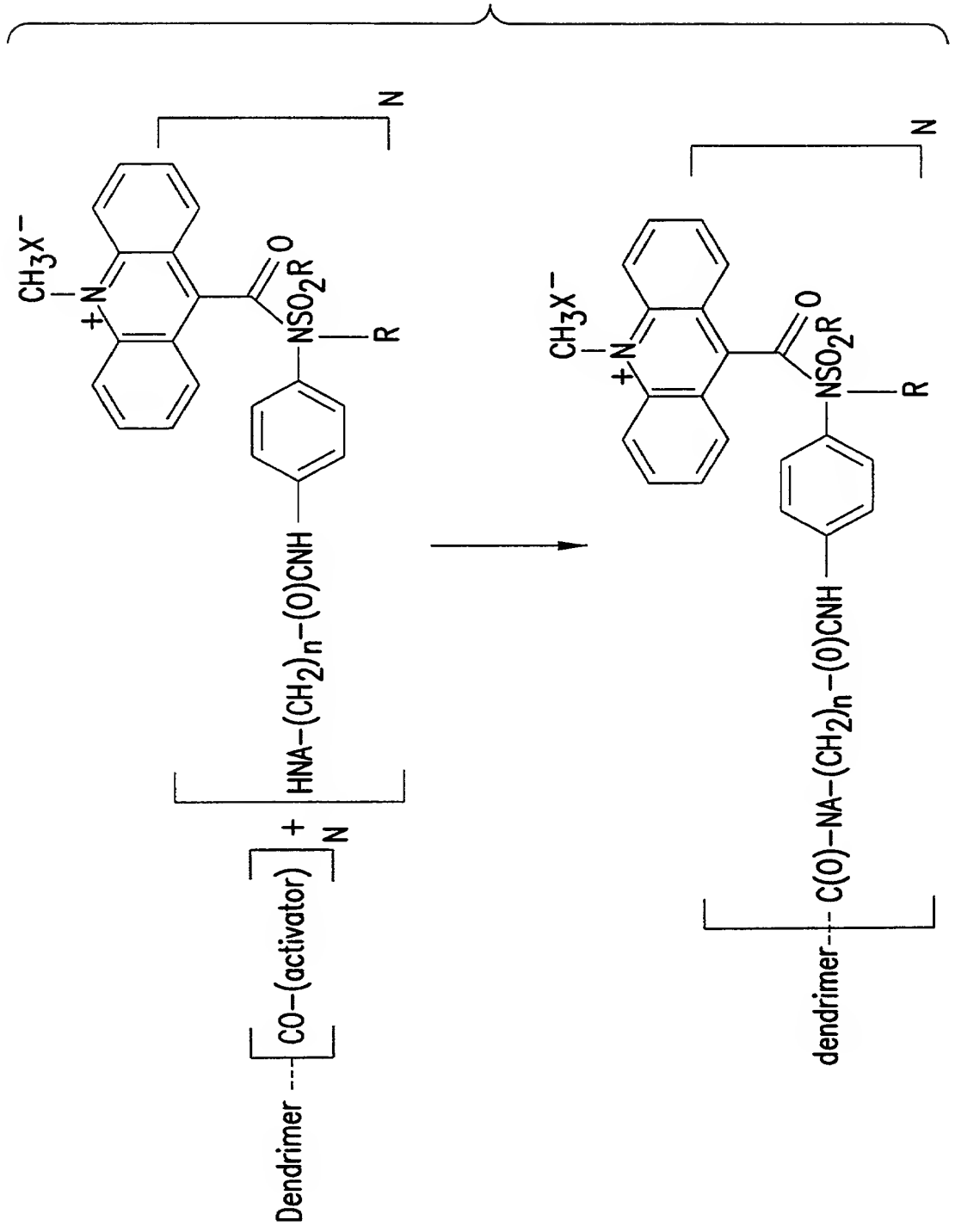
Dendrimer
CO–(activator)
HNA–(CH2)n–(O)CNH
CH3X–
NSO2R
R
dendrimer
C(O)–NA–(CH2)n–(O)CNH

FIG.8D

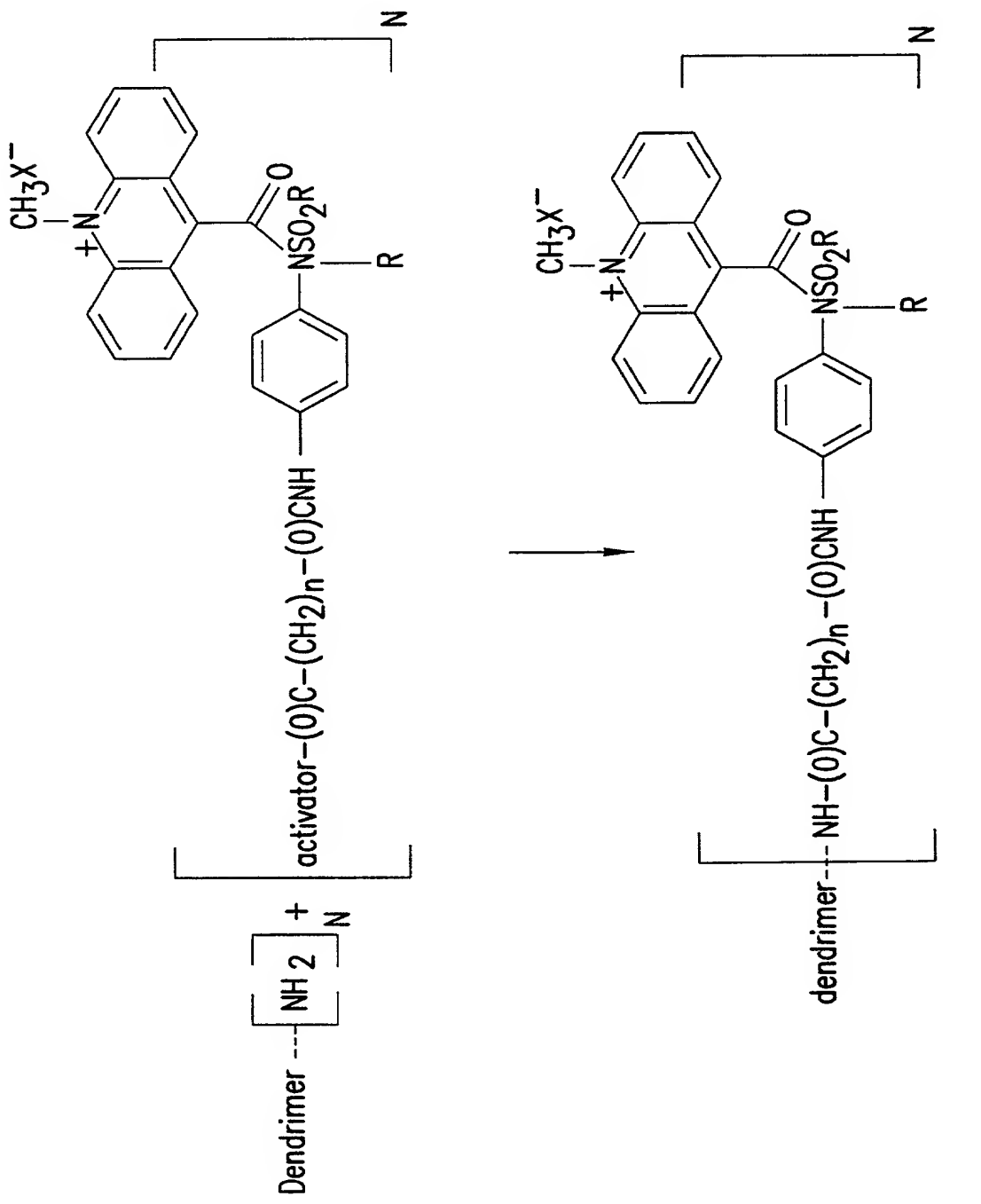
Dendrimer
NH 2
activator–(O)C–(CH2)n–(O)CNH
CH3X−
NSO2R
R
dendrimer
NH–(O)C–(CH2)n–(O)CNH

FIG.8E

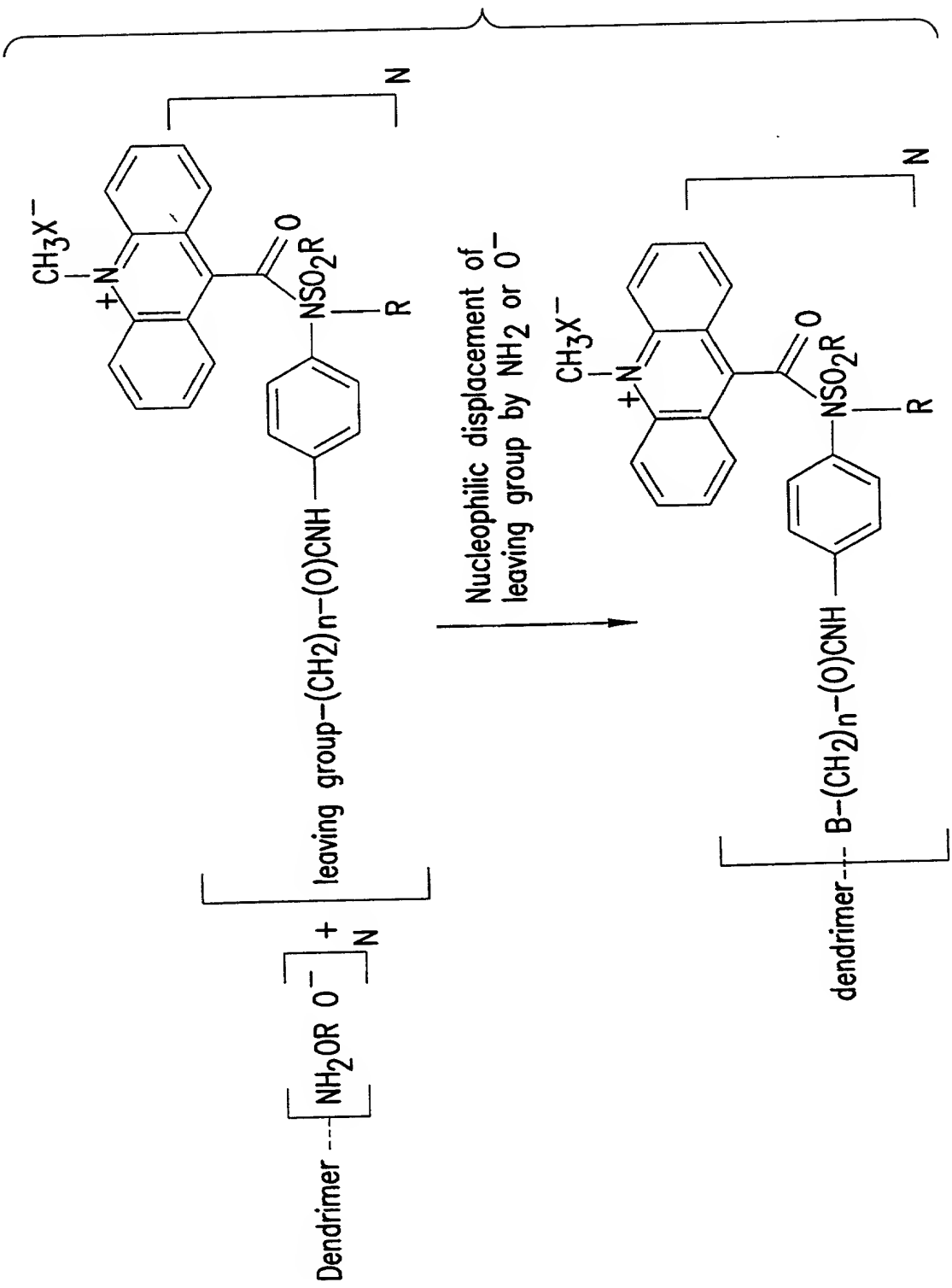
Dendrimer
NH2OR O−
leaving group–(CH2)n–(O)CNH
CH3X−
NSO2R
R
Nucleophilic displacement of leaving group by NH2 or O−
dendrimer
B–(CH2)n–(O)CNH

FIG.8F

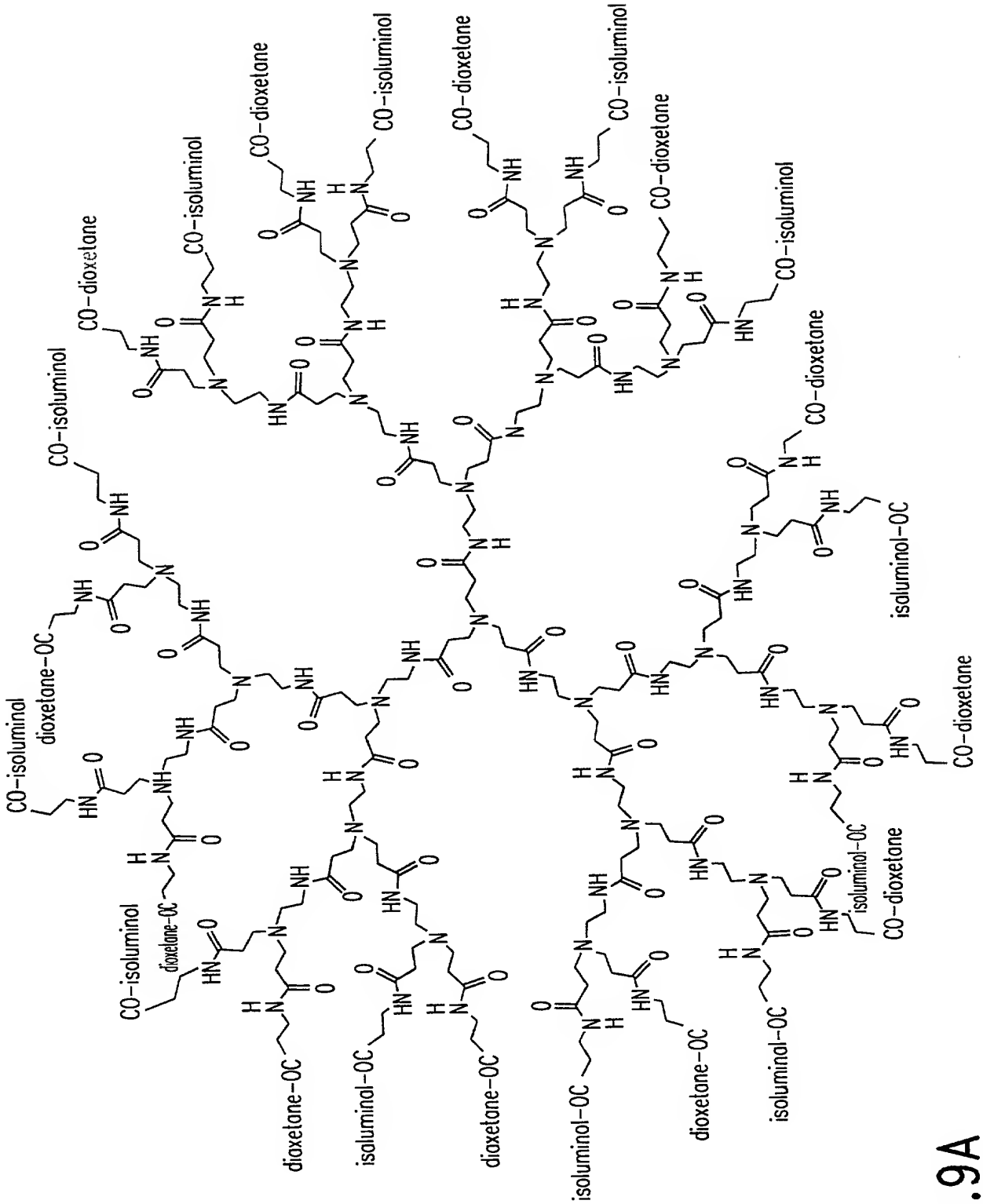

FIG.9A

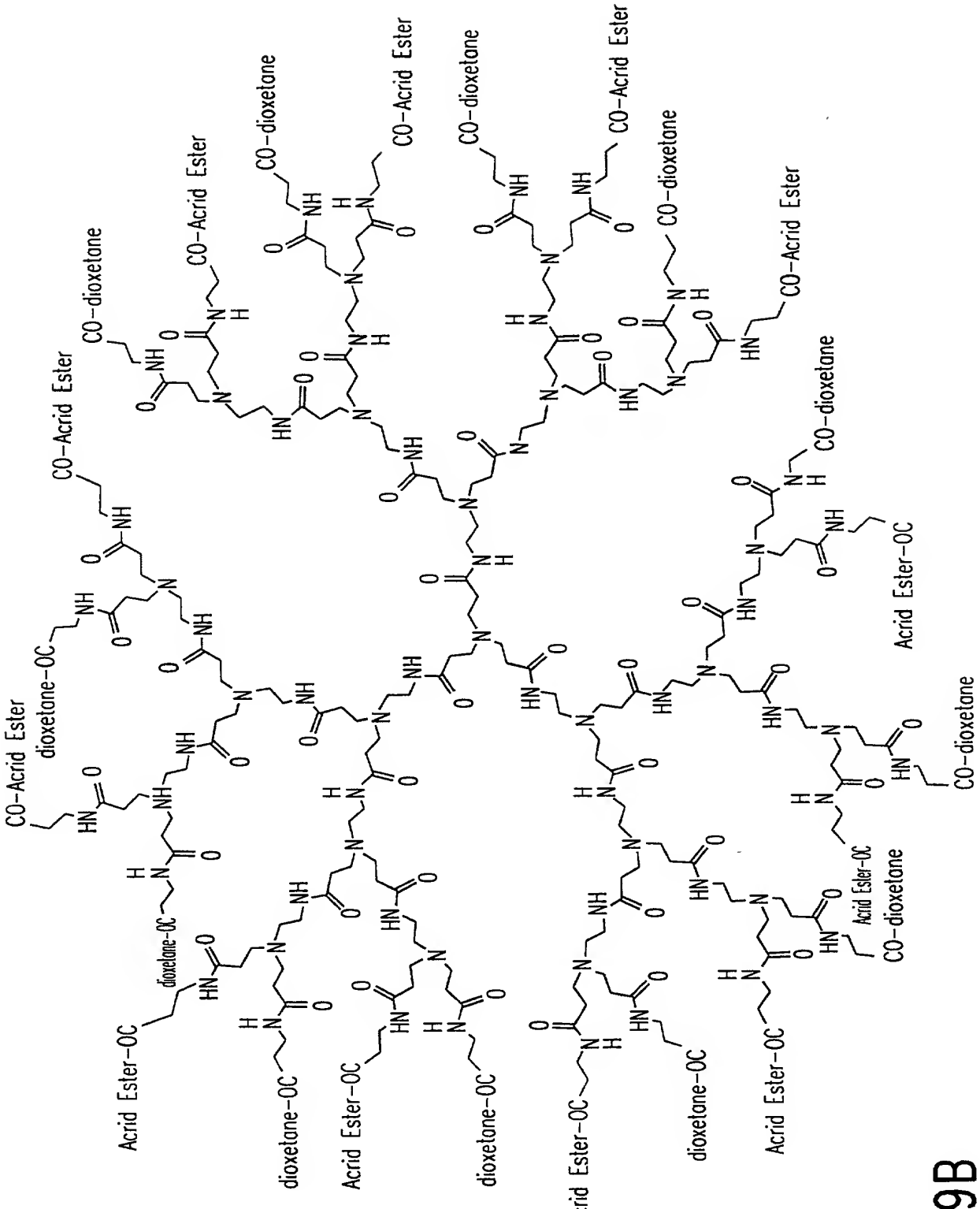
CO-Acrid Ester
dioxetane-OC
Acrid Ester-OC
dioxetane-OC
CO-dioxetane
CO-Acrid Ester

FIG.9B

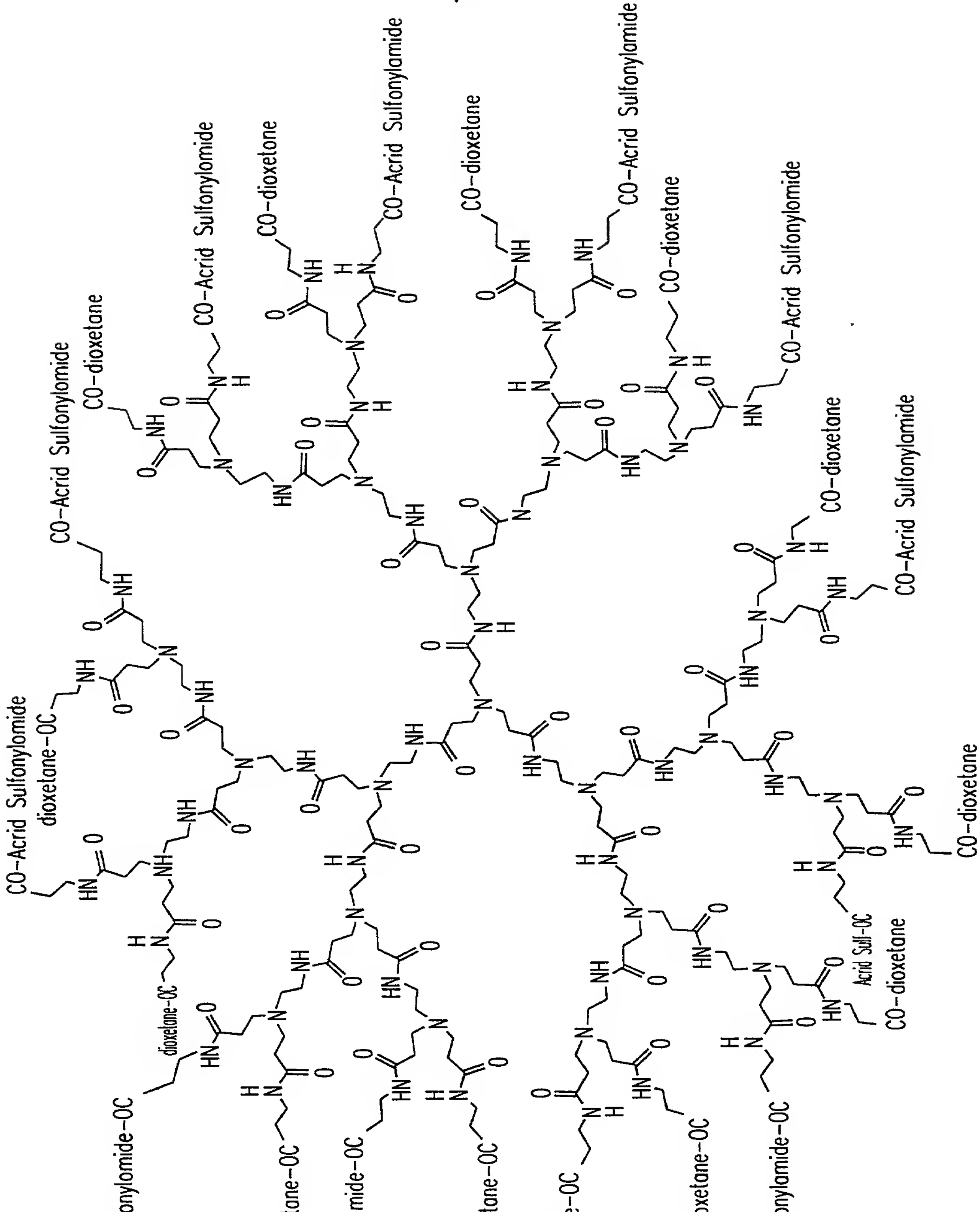
CO-Acrid Sulfonylamide
CO-dioxetane
CO-Acrid Sulfonylomide
CO-dioxetone
CO-Acrid Sulfonylamide
CO-dioxetane
CO-Acrid Sulfonylamide
CO-dioxetane
CO-Acrid Sulfonylomide
CO-dioxetane
CO-Acrid Sulfonylamide
CO-dioxetane
CO-Acrid Sulfonylomide
dioxetane-OC
CO-Acrid Sulfonylomide
CO-dioxetane
Acrid Sulf-OC
CO-dioxetane
dioxetane-OC
Acrid Sulfonylomide-OC
dioxetane-OC
Acrid Sulfonylamide-OC
dioxetane-OC
Acrid Sulfonylamide-OC
dioxetane-OC
Acrid Sulfonylamide-OC

FIG.9C

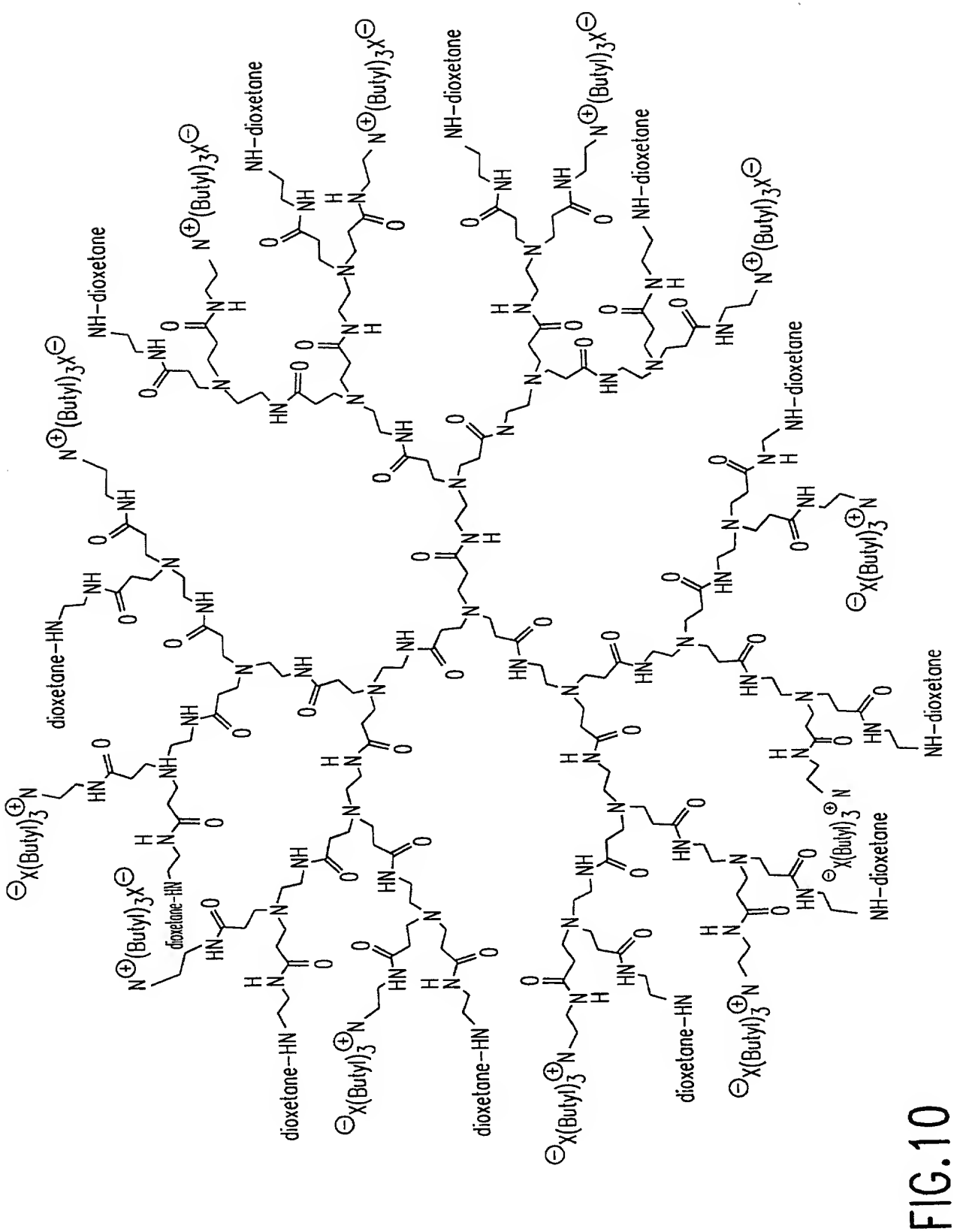
dioxetane-HN
NH-dioxetane
$N^{\oplus}(Butyl)_3X^{\ominus}$
$\ominus X(Butyl)_3^{\oplus}N$

FIG.10

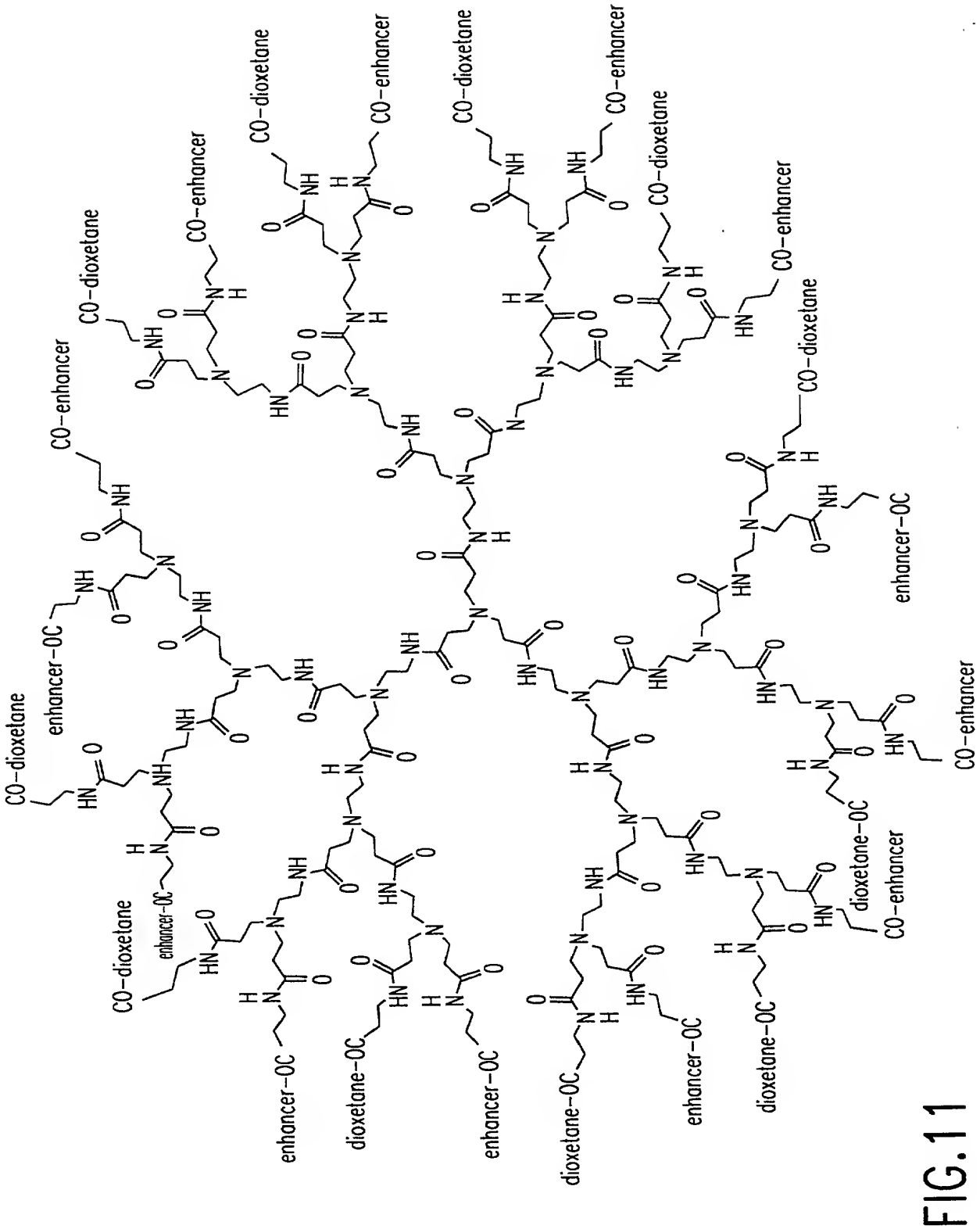

FIG.11